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Wilmot puts paid to Estrel doubts

by Kevin Cahill
ICL will shortly announce a third Atlas 10 sale and is expecting substantial gains in the US market, according to managing director Rob Wilmot. In his first major public statement from the company this year, Wilmot confirmed that progress on the Estrel mid-range mainframe, which Japanese computer builder Fujitsu is manufacturing to an ICL design, is bang on target.

Wilmot showed the first of the Estrel CPU boards which are based on Fujitsu's 8000 gate uncommitted logic arrays with 256K fast memory chips. He added that the Estrel would have a 64 Mbit main memory, comparable with some of the biggest mainframes in current delivery.

Estrel is the successor to the 2900 series and is due for delivery in 1985. ICL is committed to building most of the machine, but the CPU will be delivered by Fujitsu.

Doubts had recently been expressed about progress on the machine which is central to ICL's mid-fifties strategy.

These should now have been

laid to rest by Wilmot's confident displaying of the main unit of the machine.

Wilmot confirmed the delay on the Mitel PABX, but reaffirmed ICL's determination to take the machine from the Canadian supplier. He was disappointed by the delay, he said, but with both ICL and IBM breathing down Mitel's neck he thought the telecoms supplier would meet the new deadline of December this year.

Wilmot refused to name the third Atlas customer, but noted that the first Atlas, delivered last week, had been handed over to SERC and the second machine, for Sainsbury's, would follow in June.

The Atlas programme, whereby ICL delivers and installs Fujitsu's big air-cooled IBM compatible mainframe, is intended to develop expertise in IBM systems at ICL, while keeping the company involved at the top end of the computer business.

Although a little late in the field, ICL has also announced that it is forming a Knowledge Based Engineering Group at its new £21 million development centre at West Gorton near Manchester.



WILMOT... Confirmed delay on Mitel PABX.

CAD Centre managers buy up part of the firm

by Andrew Thomas
ICL will not get all of the Cambridge CAD centre. It has been revealed that part of the government owned centre was bought by its management just hours before the official announcement that the centre was to be sold to a consortium led by ICL.

Information Technology minister Kenneth Baker announced on March 30 that the long-running privatisation saga was at an end with an agreement in principle for the ICL consortium to pay £1 million for the centre.

But the previous day, a contract

was signed by the Department of Industry and CAD Centre employees to set up a new company to carry on the work of the image processing department. The ICL deal has yet to be completed, but a ICL spokesman said the other contract would not be a problem.

The National Council for Civil Liberties agreed. "This is a very, very dangerous piece of legislation," said general secretary Pat Hewitt. "We have already published an alternative and we hope it would be considered by the new government."

Doug Eyre, director general of the Computing Services Association, said the Bill was better than nothing. "We were very keen that there should be something to work on at least," he said. "This loss is very sad."

GEMS managing director Maurice Jones said that £250,000 had been raised to buy out the operation. The money comes from staff, and is augmented by venture capital from Newmarket (Venture Capital), Kies's College Cambridge, Trinity College Cambridge, and the BP Pension Fund.

GEMS is used in applications ranging from weather forecasting and electron microscopy to shoe design. There are currently 23 systems in the field.

DEC's allegations are hitting its reputation.

If DEC fails to prove its case Darkcrest will seek exemplary damages of £10 million.

The two sides were due back in court on Tuesday to hear the judge's decision.

DEC and Darkcrest back in court

by John Kavanagh
MINICOMPUTER leader Digital Equipment was taken to the High Court last week by the small UK systems house Darkcrest in a bid to get some movement in the companies' lawsuits against each other.

The case was quickly adjourned

while the judge decided whether Darkcrest was right in bringing matters to a head in this way.

Darkcrest went to court to try to force DEC to prove its software piracy allegations, which date back to last summer. The company says that until the case is resolved

DEC's allegations are hitting its reputation.

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court on Tuesday to hear the

judge's decision.

Digital distributors celebrate a victory

by John Kavanagh

VICTORY has been claimed by Digital Equipment's 10 UK authorised computer distributors in one of their first actions against the company as a pressure group. They have persuaded the US manufacturer to extend its authorised distributor scheme to cover its microcomputers and products. "It is a step-by-step practical guide."

The companies are now talking to DEC about competition between the company and its distributors in the end user market.

They are also pressing DEC to tighten up on its delivery service.

"We are supposed to get preferential treatment but we are not satisfied this is happening," said Richard Coulson of Coulson Electronics.

The "official" distributor started getting together some months ago. They have now put their meetings on a formal footing by setting up the Independent Association of Authorised Digital Computer Suppliers, mercifully and gallingly shortened to IDACS.

Between them, they have 1,000 DEC installations in the UK and spend nearly £20 million a year on DEC hardware. They have drawn up a formal constitution and are working on a code of conduct which will be binding on all members.

"It's the first Torch lookalike," says Torch MD Peter Harris. "It's remarkably similar in both design and the choice of components. They say imitation is the sincerest form of flattery."

The Tiger should bear more than a passing resemblance to the Torch. A year ago, Torch asked HHI to quote for building their machine, and sent a complete set of designs to HHI, resident just down the road, but HHI didn't get the job.

"Their quote was eight times higher than the one we've accepted," says Harris, who remains tight-lipped about possible legal action.

"It would be indiscreet of me to discuss the matter," he says.



FAIRBAIRN... Change in attitudes.

NCC to show industry how to profit from micros

by Robert Parry

BRITISH industry is at last aware of microelectronics and the potential benefits to products and processes - but is unsure just how to put it into practice. Now the National Computing Centre is out to change that with a training package called Profit from Microchips.

"It is not difficult now to sell the concept of microelectronics," says NCC director David Fairbairn. "There has been a significant change in attitude. Five years ago people's response was 'What's microelectronics?' Today they say 'Yes - but how do we apply it?'

The government microprocessor awareness project had a difficult task, but it is substantially done."

With the new package, the NCC aims to get as middle management - those already involved in implementing any move to microtechnology - through a pincer movement. Companies are aware they should be looking at microelectronics, and there is a base of more than 150,000 trained

technicians that know about the technical aspects, says Fairbairn, but there is a gap in the middle.

He reckons the package gives a company all it needs to identify and evaluate microelectronic applications, where to get financial and specialist assistance, and how to ensure the successful integration of microelectronics into processes and products. "It is a step-by-step practical guide."

Developing the profit from chips package cost £250,000 says Fairbairn, about half coming from government funds.

For £300 the buyer gets video tapes, overhead projector slides, lecture notes and "syndicate exercise" for the course students.

LINE NOISE

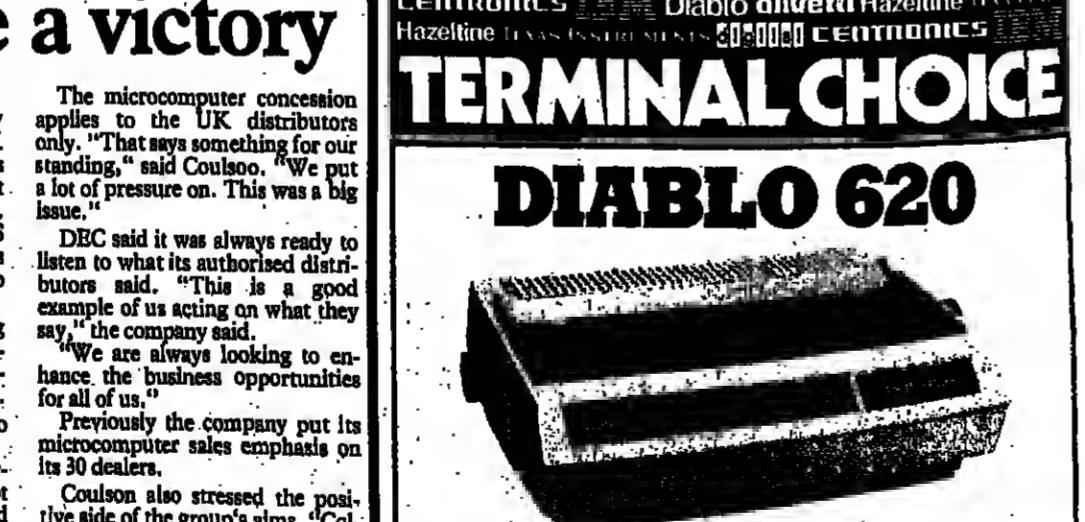
IBM lookalikes and Apple ripoffs are common enough but HH Electronics' first venture into microcomputers, the Tiger, has caused a few way smiles in Cambridge-based Torch Computers.

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Election kills the Bills

It would cover manual systems as well as computers, for example.

The British Medical Association welcomed the IDPM's approach. "We hope the Bill disappears without trace," the BMA said. "We would be happy to work with others to redraft it."

The National Council for Civil Liberties agreed. "This is a very, very dangerous piece of legislation," said general secretary Pat Hewitt. "We have already published an alternative and we hope it would be considered by the new government."

The new company, GRMS, of Cambridge, is managed and staffed by the team of 14 CAD Centre employees originally responsible for the image processing system, GEMS.

GEMS managing director Maurice Jones said that £250,000 had been raised to buy out the operation. The money comes from staff, and is augmented by venture capital from Newmarket (Venture Capital), Kies's College Cambridge, Trinity College Cambridge, and the BP Pension Fund.

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THATCHER... Election call means contentious Bills could be redrafted.

It has been strenuously opposing the original liberalisation Bill," he said. "British Telecom is already giving better service because of that."

A spokesman for British Telecom said the Bill could well get a swift passage through Parliament if Mrs Thatcher's government was re-elected because it had so recently been debated in full.

Sandy Skinner, marketing manager for BT's rival Mercury, hoped the next administration would pick up the Bill as soon as possible.

"There is pressure on multi-national companies which store in different countries," said a spokesman. "There is the possibility that they will send data to this country. It could become a problem for us companies in particular."

Offs said that the jointly-protected Bill would be radically different to the government's outline.

But the Post Office Engineering Union welcomed the announcement that killed the Bill, which it

had been instrumental in drafting.

For the election's effect on the debate revolution: see back page.

Some of the finance men who will be seeing Apple management privately this week, have already asked Graziano if the Apple III will be withdrawn, but he is reported to have prevaricated, rather than said no.

But analysts, while querying whether Press comments on the price range of \$2,000 to \$3,000 seen for the machine were too low, say that Apple has other new machines up its sleeve.

Graziano said that the company had not been able to fulfil demand for the Apple IIe, which continued to pick up orders well in excess of the company's capacity to deliver.

He said that the Apple III is a small part of the company's business. "The shortfall in sales will have no significant effect on

the company's results," Graziano continued.

He also noted that generally sales in Europe were below expectations, despite growing by 30% last year. The Apple III failed to have any significant sales in Europe.

Last year inventory piled up at the Irish factory, contributing to the departure of the company's European director of manufacturing, Alec Rafter. According to unconfirmed reports Apple IIIs in the UK were selling at about the rate of 70 a month against targets of 500 a month.

And Graziano had plenty of current comfort to give those forecasts. Early response to the Lisa has been excellent he said.

Volume delivery of the Lisa will begin in June and the new Macintosh machine will follow.

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Discs seized in software wrangle

by George Black

DISCS and documents were seized from an Oxfordshire office in a dramatic development in the rights wrangle between two software firms.

The dispute involves BL Systems, the British Leyland subsidiary, and Insight International, set up by three ex-IBL employees. BL is alleging that the three are making illegal use of its own Sec Why manufacturing modelling package and of its customer list. The Insight people have denied the claims.

A court injunction was obtained by BL restraining Insight from exploiting its Sec Why know-how, but Insight says it was happy to comply because it had no intention of doing so.

Edward Fiddy, Junction Bright and Mark Elder left BL eight months ago and have set up their new business in Woodstock. A search of Insight premises, carried out in accordance with a writ, has

in various papers and discs being removed from the offices, but Fiddy commented: "What they took was completely irrelevant to our software development. There was a manual I'd taken home three years ago and hadn't looked at for a couple of years at least. And there were a few old discs - but it was basically a lot of detritus."

BL's company secretary Geoffrey Parr said they were considering seeking a further order for seizures of other articles, but were waiting for a response from Insight to their inquiries before making their next move.

Insight's counsel had offered to submit the matter to an independent expert, he said, but the offer had been rejected. He denied that any customers, BL's or other, had been approached. He had a list of participants at a BL conference, but that was public information, he added.

Parr said: "We expect to encounter competition in this business, but don't expect our property to be removed from our premises."

Fiddy said: "I imagine they are frightened of the competition."

Fiddy said they were developing



MOORE... Intel will sustain its recovery.

IBM's forgotten Series 1 mini gets a new lease of life

by Andrew Thomas

IBM's forgotten system, the Series 1, has been saved from the scrapheap with the introduction of full SNA capability and more powerful hardware. The Series 1 was launched seven years ago as a "future proof" system, its "open architecture" being designed to allow new technology to be plugged in as it was developed. But since then, Series 1 has faded into almost total obscurity in the UK. Although popular in the US, it is the \$100 which has proved more popular with network users here. IBM refuses to say how many systems have been delivered.

The new lease of life given to the ageing mini comes at a time when practically every other minicomputer maker is offering full SNA and more sophisticated hardware. IBM-watchers see the an-

Intel expects \$1 bn sales this quarter

by Kevin Cahill

CHAIRMAN of key US semiconductor manufacturer Intel, Gordon Moore, said that the company would pass \$1 billion in sales this quarter.

Moore's confidence in the strength of the recovery, reflected in analysts' forecasts that Intel would move through sales of \$1 billion this fiscal year and go to \$1.4 billion next year, came as a welcome news to both his audience and the industry.

Intel is the leading US independent semiconductor manufacturer and the collapse of its profits in 1981 to \$27 million, from \$96.7 million the year before, was a rude reminder of the nature of the recession.

He reminded his listeners that last year the first two quarters had been good but that the market had collapsed after that. He confirmed that currently lead times were "stretching out" and prices were firming in parallel with the existing backlog.

The new lease of life given to the ageing mini comes at a time when practically every other minicomputer maker is offering full SNA and more sophisticated hardware. IBM-watchers see the an-

nouncements as IBM's attempt to get into a market which has been increasingly taken over by rival mini makers.

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MicroFocus aims for mainframes

by John Kavanagh
GIBBOL, specialist Micro Focus is taking its compilers and development aids into the mainframe market and planning a move into office automation with the help of over £2 million from a public share issue.

This week the company is putting 23% of its shares on the Unlisted Securities Market, a cheaper way of raising money in the City than going for a full Stock Exchange listing.

And the City has welcomed the share placing – even though on paper it is not immediately attractive.

At a meeting of City specialists last week chairman Brian Reynolds refused to yield to pressure for a profit forecast despite the fact that the company made its first profit – £854,000 on a turnover of £4.45 million – only last year after four years of losses.

He also said the company would not pay dividends in the foreseeable future. This was unusual in the UK but standard among high-growth computing firms in the US, Reynolds said.

But City confidence is shown by the fact that 35 firms have volunteered to underwrite the share placing. This means that if there were not enough buyers the underwriters would pay Micro Focus' resipable.

Fraud defendant fires back at its accuser

by Howard Karten
PARADYNE, which had been accused by the US Securities and Exchange Commission (SEC) of fraud in connection with an \$84 million social security administration contract (SSA), last week alleged that the SEC was trying to "browbeat" SSA officials into changing their stance.

In papers filed in US District Court in Tampa, seeking dismissal of SEC charges, the Florida communications and system manufacturer claimed that the director of SSA's systems engineering office was satisfied with the performance of the system Paradyne installed, and that SEC officials were aware of SSA's satisfaction. Moreover,

Paradyne officials are said to be mystified over several aspects of the SEC's case, which charged that a demonstration by Paradyne to SSA officials was a complete sham. The SEC complaint alleged that the computer Paradyne used to win the bid was nothing more than an empty case with flashing lights.

Paradyne officials are said to be puzzled about the SEC's extreme hate in moving against the company. Moreover, Paradyne officials claim, in any case no investor has been defrauded by Paradyne's actions.

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the minimum price of £1.55 for any unsold shares.

And Sir Timothy Hartford, a director of merchant bank Singer and Friedlander, which is sponsoring the placing, told the City specialists, "Micro Focus is by far the most fascinating computer company I am aware of in the UK or the US. There is no comparable company listed."

Co-founder and chief operating officer Paul O'Grady said Micro Focus had doubled its turnover every year since its formation in 1976 – but its growth was only just beginning.

Leader comment – 11

"The market is becoming ripe for Cobol-based products," he said. "There are a lot of 16-bit machines around running mainstream business applications, so microcomputers are now big enough for Cobol systems."

Microcomputer firms like Apple are aiming at big companies – companies with a huge investment in mainframe Cobol systems already. So data processing departments are coming across our products.

Meanwhile, the IBM Personal Computer launch has had the instant effect of making micros respectable."



REYNOLDS . . . Exports twice pleased the Queen, now the City is with him.

improve the high-level interface for other users in other activities. With our own automated office system we could be our own guinea pig for future products."

Micro Focus does over 75% of

SALES BRIEF

Logica contract is a gas

SOFTWARE giant Logica has won a contract worth almost £1 million from Holland to supply programs and hardware for modelling the flow of natural gas in pipelines. The order comes from NV Nederlandse Gasunie, which is responsible for buying natural gas in Holland, and for transporting it for export.

The system will be based on a Digital Equipment Vax computer.

Police order

SOFTWARE Sciences, Thorn-EMI's systems house, has won a £1 million contract to supply Humberside and Kent police with a criminal information system. The project, in which the two forces are being supported by the Home Office, involves a dual Burroughs B5900 mainframe which will be interfaced to the police national computer at Hendon.

BT buys local

UK NETWORK specialist Digital Microsystems has picked up a £1.9 million order from British Telecom for 96 HiNet systems. The company has sold 216 local area network systems to BT, for a total £4 million.

Some of the HiNets are linked to central IBM and ICL mainframes to give regional office access to accounting information. Others are used locally by engineers for recording faults on telephone lines.

Wang's biggest

WANG Last week received the firm's largest order to date: A \$20 million contract from the American manufacturing giant General Electric for Wang VS, OIS and professional computer systems. GE already is said to have an installed base of Wang hardware worth around \$30 million. The Wang hardware ordered last week will be delivered over the coming year, for use in GE facilities around the country.

The American investor added: "I will move in alone or with a French partner – CII Honeywell Bull or Jeumont Schneider."

Both French firms are known to be tempted by the prospect of an alliance with Peddle or another Californian microcomputer manufacturer.

French Minister of Industry Laurent Fabius has told Peddle that he fully approves his venture.

Newbury standard

ADDS, the micro making subsidiary of the US computer giant NCR, has decided to standardise on matrix printers made by Newbury Laboratories for its systems. The first year's contract is worth £250,000 and covers a range of printers from the 8510/80 column 125 cps, to the 8925, a near letter quality printer.

Veterans deal

ONE of Europe's oldest computer companies, Nixdorf of Germany, has won an order from one of the UK's oldest printing groups, Premier Metropolis. The computer to be supplied is a Nixdorf 870 for payroll and ledger applications and replaces a VRC magnetic stripe ledger card system.

It's all Irish

A DUBLIN communications company has been chosen to supply a million worth of digital multiplexers to the Irish Department of Posts & Telegraphs for the national digital transmisison network. Cornet will make the equipment, which is designed by the French company SAT, at its Dublin factory.

The store-and-forward version will

be available later this year which will have a five Mbyte disc drive to hold up to 20 pages and send them to any number of addresses at different times – to make use of off-peak call rates.

The five Mbyte version will cost about £10,000 and larger discs will be available. A lot of disc space is taken up for each page because it is stored as raw data so that it can be transmitted in the slower and simpler Group II format, to which no compression techniques are applied.

Lesser models will be able to offer delayed transmission by using a timer and a stack of documents in the feed hopper.

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SAXTON . . . Won over Japanese.

Japan giant wants to lead UK offices

by Donald Kennefick
JAPANESE electronics giant Matsushita is planning to assemble and later manufacture telecommunications products in the UK as part of its bid to take a leading role in this country's office automation market.

Its latest release in the UK is a facsimile receiver, which can be upgraded by adding interfaces for computers and word processors.

The transceiver, unveiled last week, will be marketed by the company's UK subsidiary Panasonic Business Equipment, which was set up in 1980 when the parent bought its UK business products distributor Teletronics. Joint managing director John Saxon, who founded Teletronics in 1966, said the company had won more than 50% of the Japanese facsimile market. In only three years of selling machines, although it had made components for other companies' machines since 1945. It has won 20% – the largest share – of the market for telephone answering machines.

The UF-300 facsimile transceiver can also display the telephone number or identity code



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John Riley reports from the International Data Corporation briefing held in London last week

DP departments are losing control

"COMPUTER fleet management" could be one solution for DP managers who are losing control of computer acquisition in large companies, claimed Harry Henry, vice-president of marketing with International Data Corporation (IDC).

Speaking last week of the large American company experience, Henry said that as micros become cheaper they are being bought outside traditional DP budgets and used in an unco-ordinated way. An IDC sample of 500 top US companies revealed that one micro in five ends up in a large company but only 15% have been acquired under DP department control.

Increasingly, managers who have acquired micros only contact the DP department when there are problems, causing DP departments to spend much more time training. "Instead of worrying

about machines, DP managers are now having to worry about people," said Henry.

To regain or keep control over microcomputer management in large companies, DP managers in the US are setting up user liaison departments, to guide and cultivate users towards certain machines, and provide training. There is also a trend towards computer fleet management and bulk buying by DP departments, and more intimate involvement in corporate planning.

Henry predicts an increasing return to DP departments by managers after their initial experiments with micros. "After playing with them, managers will see it's not easy, that they involve too much time, and that the old stacks of paper are being replaced by stacks of floppies," he said.

"To use the power of the micro

they will go back to DP departments because of the need to interact and to get at databases. We will see more of this."

DP departments are also facing other problems, warned Henry. "Eventually accountants will add up the micros obtained in other departments and subtract them from the DP budget. Increasingly DP managers are having to manage distributed resources, and if micros end up becoming terminals in the future there will be demands for more processing power to handle them. Finally, there is always the lurking fear that other departments will take over from the DP department."

However, Henry predicts that DP departments will regain more control of microcomputer acquisition and expects them to acquire 35% of micros in large companies by 1987.

HENRY... "Micros are being used in an unco-ordinated way."

Software and services must change to survive

BUREAUX services and the custom software industry will have to restructure to survive, warned a top US market analyst last week.

After years of rapid growth, both areas are feeling the pinch, with specialisation and diversification now the keys to survival.

This was the message from Poos Kuypers, IDC's European analyst at his company's annual UK briefing last week. He drew attention to the turmoil in the traditionally secure software industry. He attributes the changing scene to the proliferation of microcomputers in businesses and the increased cost consciousness of companies.

The proliferation of minis and micros in user departments is hitting processing services suppliers, which are still predominantly geared towards centralised computing," he explained.

"Within Western Europe processing as a percentage of the total software and services market has slipped from 55% in 1978 to 47% in 1982."

While the outlook is gloomy for local batch processing (such as

Is an IBM System 36 coming?

IBM's System 36 will evolve as the company's middle of the road medium sized business system, and the announcement of the System 36" and the decline of the low end of the 4300 series are part of that strategy, predicts IBM

watcher Jack Hart.

"We will see IBM pushing the System 38 as the mainstream processor, and the company will try to wean System 34 users on to it via the System 36, which may be a temporary measure," said Hart.

Traditional custom software is being hit by the rapid growth in packaged software. "By 1987 the packaged software market will be three times the size of the custom software/consultancy market," predicts Kuypers.

However, there will still be growth of 11% per annum until 1987 in custom software but this will be increasingly in specialised areas.

Two areas are expanding fast, packaged software and systems houses (ie OEMs). "Both will continue to benefit from the phenomenal growth in the microcomputer sector, where the installed base for business applications in Western Europe is expected to rise from 251,000 in 1981 to 2,846,000 in 1987," Kuypers said.

images this year, believes Hart.

Other predictions for 1983 include a continued trend towards purchase only (away from renting), competitive pricing with major discounts, and an expansion of the OEM programme to include systems.

Hart also sees shorter product life cycles, more long-haul communications activity and fault-tolerant introductions which will keep machines running when they break down so that they can be repaired more conveniently.

STC throws light on a £250,000 extravaganza

by Nuala Moran

A PRODUCTION which cost £250,000 to stage, and conceived by one of the world's best known theatre lighting designers is just winding up a seven-month tour of 15 UK cities and towns. It has been seen by 100,000 people, and the set takes one pantechicon and a 10-ton lorry to transport. The stage version of a popular television soap opera? Boy George on tour? No, it's the 1983 Faraday Lecture, presented for the Institution of Electrical Engineers.

This year the lecture was "unconventional and sometimes earshattering", according to its presenter, Sir Kenneth Corfield, chairman of Standard Telephones and Cables (STC), which sponsored the extravaganza. Called The Photon Connection, the lecture deals with the use of fibre optics for communication.

Light was the theme of the event and it played a dramatic part in its presentation. This was complemented by film, stage effects and studio visual material. Sir Kenneth admitted that he had had no acting experience since his schooldays, but the rest of the panel of presenters had eight days' coaching from a professional actor.

Of course, the above makes the photon connection sound more like an entertainment-spectacular than a lecture, and this is not misleading. However, even the most puritanical of schoolteachers could not have objected to bringing the class along, as it was also a field presentation of a complex technical subject.

As Sir Kenneth said: "We don't wish ad to be remembered for presenting the Faraday Lecture

and not getting air conditioning."

He expects IBM to replace the ageing 303X series of mainframes

and fill the gap between the 4341-12 and the 3083E. "There will also be activity in the high end performance Mips race in 1983," thinks Hart.

"IBM has achieved leadership in the general purpose mips race, and although new players like Trilogy are working in the background, IBM won't give that prestige end of the market away."

There will be moves towards integration of text, data, voice and

Govt to put £45 million into space software

by John Riley

SOFTWARE houses stand to benefit from a three year, £45 million remote sensing programme announced last week by Information Technology Minister Ken Baker.

Like the recently announced Alvey money, the cash is not new, coming from existing allocations, in this case the space budget. What is new is that it is earmarked for a co-ordinated remote sensing programme.

Future satellite systems will collect earth data in a new way, by digitised microwave sensing, and systems have to be created by 1987 to cope with the resulting enormous increase in data processing and transmission demands.

Several computer related companies are prominent in the field. Logica, Ferranti, Thorn EMI, Standard Telecommunications Laboratories and Marconi Communications Systems are all members of the UK Space Consultative Committee chaired by Baker.

Presently most technology is used for internal purposes such as

searching databases, billing

clients, and accounting. The study

will look at ways to promote these aspects, including the software

but will also investigate how to

promote the use of technology in

external communications, as in

conveyancing.

A lot of solicitor's work involves

them in communicating with each

other and this is the area where

greater efficiency will be looked

for.

Another initiative designed to

make things easier for lawyers in

their attempts to introduce in-

formation technology is a com-

puter aided legal research service,

launched by London Law Re-

search, which has established an

agreement with the European Law

Centre for the use of its Eurelex

database.

London Law Research has

the project for Coopers and

Lyons.

Sir Kenneth said: "When we

master these techniques we shall

have a resource limited only by our

own imagination".

He also said that the advantages

of distance will diminish,

and thus of time. "We will com-

municate anything to anyone

with the speed of light. Photons

not electrons will connect us."

Today's systems can provide.

"To achieve this we must use

light alone", said Sir Kenneth.

This will depend on taking advan-

tage of the bandwidth of light by

using a coherent light source, by

regenerating signals optically and

by switching light, like a telephone

exchange.

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PROFILE



YEARSLEY... "A classic of my type, I suppose."

Third time lucky for one who read the signs right

RON YEARSLEY wanted to be either a vet or a politician – but is quite glad he didn't succeed at being either.

"I'm a classic of my type, I suppose, in that I got into computing by accident."

A grammar school boy, he studied to become a vet for four years after doing his national service in the Army. But he failed his biochemistry exams three times.

His next chosen career was politics. He canvassed for the Conservatives in Peckham in 1959 election unsuccessfully, and was the Young Conservatives' organiser for Kent and Surrey.

He planned to go to Balliol, but was turned down when they found out at the last minute that he had not Latin. So he went instead to Reading University.

by George Black

But while he was doing the two-year course a promised job fell through and he found himself at 26 in possession of a degree but no job.

With two false starts behind him – neither of which he regrets – what he did to now, he asked the university careers office.

What about a thing called data processing, they said. He had never heard of it, but decided to give it a try and in 1962 went to join ICL as a sales trainee.

Of course Henderson was not invited – his empire is dismantling behind his back. He ought to notice what is happening and adapt, Yearsley argues. His department may shrink from 140 people to only 20, but he can retain policy control if he can come up with a plan for office automation.

He got together with Gordon Wills – now professor of marketing at Cranfield Institute of Technology – to launch a quarterly called *Scientific Business* (now *Management Decision*), which caught the eye of ICL's public relations people.

They made him Press Officer at ICL. A group of ICL managers split off to form one of Britain's first computer recruitment consultancies, Applied Systems and Personnel (ASAP), funded by Brooke Bond. Yearsley, who went with them, took charge of recruiting DP managers.

When Brooke Bond sold out its interest in the venture to an American firm, in 1969 Yearsley and Roger Graham decided to form Brandon Computer Services. This

10 YEARS AGO

FROM COMPUTER WEEKLY OF MAY 10, 1973: Over the next five years OCR and online VDU input techniques would emerge as the main methods of data capture, with punched cards on the decline, according to a report from Flairsearch... The International Building message switching network, Swift, achieved official status in Brussels

PLATFORM

Putting intelligence into every home ...

This is an edited abstract of an address given to Edinburgh branch of the British Computer Society by Michael J. Aldrich, managing director of Rediffusion Computers.

COMPUTERS will remove the distinction between producers and consumers, working and living. They signal fundamental lifestyle changes that could be with us in the 1990s.

Computers and telecommunications are working to reverse the trend of the earlier industrial revolutions which caused the movement of population from the country to the towns and gave rise to the worldwide problems of commuter transportation and dormitory community isolation. Computers would allow people once again to work and live in the same community.

Teleworking, the transportation via telecommunications of office work in the worker at home will leave a residual office to be used for social encounter, task distribution, performance review, counselling and appraisal.

Teleworking does not mean that people will never go to their offices. It means that they will go less often because the basic office services of communications and recording will have been distributed to their homes. The office as we know it today as a particular conjunction of space and time will change dramatically.

There will still be factory and service workers. Some work, however automated, will always need concentrations of people. But even the factory workers will find their computer terminals waiting for them when they arrive home.

For a long time we have separated producers and consumers, and an inventor of much-discussed theories.

DOWNTIME

Just like the real world

IT was intended to be a simple competition, aping the real world of business – a dozen or so programming teams, each composed of three or four students, competing with each other to develop a few business programs under "real world" programming conditions of time and pressure.

The prizes: some programming books and other articles of nominal value, and the chance perhaps to learn what real world programmers go through.

Everything was in readiness at La Guardia Community College in New York City: the terminals had been prepped, City University of New York's IBM mainframes had gone through maintenance the

weekend.

And, again, like the real world, the adrenaline-producing event has been rescheduled for another weekend.

Another test for Sir Ranulph

GUEST speaker at the 12th annual ICP Software Awards at the Savoy Hotel was the British transglac expedition leader, the admirable and eloquent Sir Ranulph Fiennes. Well-chosen, no doubt, for the stimulus required to present 152 prizes to 88 companies and endure their self-backslapping, a ceremony that now consumes the best part of two hours. And he certainly had demonstrated – as one participant pointed out – on contriving to spend the whole of 1782 years abroad.

There are a couple of dozen Hendersons who are going to read the signs right and get on to the board in the next five years, according to Yearsley. There are also at least a few who will read them wrong and lose their heads.

by Don

LiveWare File

ers just as we separated working and living. It was always a false separation. A producer is invariably a consumer and a consumer is often a producer, even with our quisit economic value system. With new telecommunication systems in our electronic house or cottage, the distinction might fade completely. The weekday factory worker might become a weekend software producer or even a handicraft producer.

The terminal in the home will bring a new era of information-based services into the home. The factory worker might decide to do some teleshipping by dialling his home terminal into the local superwarehouse, ordering some goods that would be automatically picked and packed for collection or even home delivery. The worker's bank or credit card account would be automatically debited. (The banks are already planning such facilities from supermarket POS terminals).

As a sports fan, he might then dial into his local leisure centre to book the squash court and send a message to friends confirming the arrangements.

The home terminal will also provide the electronic messages – from the plumber who is coming tomorrow to fix the central heating to the gas board which now sends the final reminders electronically before disconnecting electronically. He has his message service set up to exclude as much junk mail as possible. He can even book his spring, summer, autumn and

winter holidays from the terminal. Finally, one of the children tells him there is a new multi-media video game in the cable service (mixing audio, video and graphics with voice input/output). So they dial in, select the game. Family Outcry, and play together. He loses, of course. Some things will never change.

The eldest daughter has always been good at computers. She was given her first upon her second birthday. It taught her vocabulary. Now she spends evenings and weekends, along with the rest of the fifth and sixth forms, working on computer programs for the local micro store. Her ambition is to be an information scientist. They used to be called librarians.

The local library has changed somewhat. The books are as plentiful as ever, but there is now an information centre where they used to keep the old office photocopies.

In this centre there are a dozen computer terminals in small booths, all connected into a copier/print machine. From the terminals, one can roam the databases of the world making connections from one subject to another, printing out relevant information along the way.

The technology to do most of these things is already here. Most of the applications listed are already running in business videotex or are at the laboratory stage with multi-media devices. They will be commonplace by the end of this decade.

Does it matter that few people seem to have noticed?

Pseud's Corner

"TODAY computers and robots are rapidly developing their behavioural and intellectual skills – they acquire and manipulate knowledge, take creative initiatives and modify their surroundings."

"The abilities and activities of computers have accumulated to the point that it is now real to see them as a new life form. They are evolving limbs, sense, brains, cognitive faculties, emotion, free will, reproductive (sic) capabilities. A machine capable of self-reproduction and of effective intervention in the course of its own evolution passes the key test of alive or not."

Mark Holland in a description of Geoff Simon's *Are Computers Alive? Evolution and new life forms*.

BUCKINGHAM Palace garden parties are famous for their cucumber sandwiches (with the crusts cut off). Now, thanks to Mitsubishi, there is no risk that the sandwiches might contain objects other than the regal legume.

For the wily Japanese have developed an optical sensing system for sorting out objects without human intervention. According to a spokesman for the company, the system can determine an object is a fish or a cucumber.

This marvellous leap forward,

which will remove all fear of faulty food from the Palace caterers, will unfortunately end a tradition

started in the reign of King Henry VIII: The Royal Order of Yeoman

Hallbut will no longer be required

to positively vet incoming food.

Chad

"I'M A 'DON'T KNOW'... I DON'T KNOW IF I CAN STAND FIVE MORE YEARS LIKE THIS."

"I DON'T KNOW IF I CAN STAND TEARING UP MY BUDGET IF THE GOVERNMENT DOES CHANGE..."

"...I DON'T KNOW IF I CAN STAND A BREAKFAST TV ELECTION SPECIAL!"



Computer Weekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Thursday, May 12, 1983

The City is ready to invest

CONCLUSIVE proof that the City is now more than ready to invest in UK computing firms has come with Micro Focus' offering of 23% of its shares on the Unlisted Securities Market.

By that time, expert systems or artificial intelligence systems will be making a commercial debut. They will extend the uses and opportunities for computers into totally new dimensions.

We are only at the beginning of

the computer era.

Finally, one of the children tells

him there is a new multi-media video game in the cable service (mixing audio, video and graphics with voice input/output). So they dial in, select the game. Family Outcry, and play together. He loses, of course. Some things will never change.

The clue to this lies in his own

final phrase "Mass of enterprises

...with no intention of divulging

that data to outside parties."

The problem lies in the fact that his proposal would mean that, intention or not, no-one would ever know whether there exist "harmless" people exempt from the laws of burglary or fraud.

The alternative and better solution would be to define such systems and give the Registrar power to delay this registration until such time as he has completed the registration of the 60 to 100,000 other systems which are turned down – and twenty which are not even get to base. Most are turned down because their ideas are badly thought out, poorly presented and financially suspect.

There are two possible solutions to his dilemma. Firstly, if an adequate definition can be made of personal data systems where everyone who is contained within it as a data subject must know it. We seem reluctant to ask who will use it and for what purpose and where is the value to our community of these new things?

We find further difficulty in dealing with technologies that are insensitive to our previous institutional dispositions and to our most cherished pecking orders.

Yet if City people are baffled by what Micro Focus sells, they are rarely to go with the share placing. It is being underwritten by 35 hardened City firms. And Sir Timothy expected no problems in selling the shares.

Several high-technology firms have found ready acceptance in the City over the last three years. But Micro Focus is different from the computer manufacturer or systems house which can show potential investors a system aimed at a specific market such as accountancy. Such a system is easy to understand. The idea of a compiler is difficult to grasp.

And in our communities the thumping beat of the ubiquitous computer is drumming intelligence into every home appliance we use, into our cars, into our building and into our lives.

But the approach must be made seriously, as Peter Minton's letter (this page) makes clear. It is no use for technical people with a bright idea to go to the City in a slap-happy way.

Micro Focus' presentation was well received, however baffling its products might have seemed. Chairman Brian Reynolds in particular came over very well and got away with refusing to give a profit forecast or pay dividends in the foreseeable future.

The backing is available. But the approach must be right.

Good riddance, Bills

TECHNOLOGY and elections would seem to have little to do with one another, unless one counts the intriguing swingometer (latterly and unhappily superseded by computer predictions) of the late commentator Bob McKenzie.

"The abilities and activities of computers have accumulated to the point that it is now real to see them as a new life form. They are evolving limbs, sense, brains, cognitive faculties, emotion, free will, reproductive (sic) capabilities. A machine capable of self-reproduction and of effective intervention in the course of its own evolution passes the key test of alive or not."

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Commodore puts Pets before office mice...

APPLE has set the up-market micro pace with Lisa, and Commodore will not be far behind with its easy-to-use answer, but the next year's biggest business sellers are still going to be the established eight-biters that people know how to use.

Commodore reckons that its 8000 series Pets will sell best next year, because of the software already out there in the market, and that its 700 series, shown last year but only now starting to dribble out to customers.

Only after the 700 series gets going will come the 28000-based 16-bit machines with Lisa-like features.

"Lisa - it's a program, not a machine," says Commodore boss Jack Tramiel. "But everybody's definitely accepting that it's a good idea. Before the calendar year is over we will have a product - and be selling it so that most people

can afford to buy it."

But Tramiel is less than convinced about Lisa, with its mouse and pictorial imagery on-screen, in the office. "It's a home product, not what office people want. I don't think that is how the world is. If it is the world, then Apple is right - but \$10,000 is a lot of money for very little."

The emphasis Apple puts on software and the accessibility of the system will find an echo in Commodore. The machine will be Lisa-like in getting away from dependence on language - which will make the system easier to sell internationally - and software will be the key, not the hardware.

And the software will come from third parties, not from Commodore itself. "We will be a half-billion dollar software company by the end of 1985," proclaims Tramiel, "working with third parties. We believe in sharing the wealth."

Commodore has appointed a new vice-president to look after the software side of its business - Sig Hartman, previously with TRW - who will be seeking out the third-party software to sell through Commodore's distribution network.

Mice may not be what the office market wants, but Tramiel is certain that speech input and output will be. He sees speech technology coming to the fore in the mid-1980s, which is why Commodore will be pushing speech at the low end of its range particularly.

"I look to the next five years, not the next six months," says Tramiel. "If you get the little guys used to speech, as I learn to will learn. Home computers are important now because they lead to the system business in the future. We have an awful lot of work to do so that people know Commodore now, and buy Commodore later."

For the meantime, Tramiel intends to get at the office market by giving it a single desktop unit that will serve all managerial needs. A workstation combining microcomputer functions with telecommunications capabilities for managers, with voice and data going down the one telephone line, will put in an appearance in November, he says, ready for selling in the spring.

And it will be a device going for the big market - not for the classes but for the masses, Tramiel.

TRAMIEL . . . "Lisa - It's a program, not a machine."

ONLY THIS 8" STOPS BRITAIN FROM FALLING BEHIND.



You're looking at the Windsor Drive.

It's the only UK-manufactured 8" fixed Winchester.

Together they require no preventive maintenance or adjustment and promote enhanced reliability.

Windsor's 8" Winchester is a winning blend of proven Winchester technology and the latest state-of-the-art.

It's a high performance system with a built-in Winchester and a Winchester chamber with LSI electronics to ensure low cost of ownership.

It's the only UK-manufactured 8" fixed Winchester.

An impressive little unit that produces 80 Mb from a mere 4 1/2" x 8 1/4" x 15".

The Windsor has industry standard SMD interface for easy system integration.

And it's amazingly cost effective.

With very low power consumption.

It incorporates built-in shock mount.

It can be mounted in any plane.

It's built to within its Twinkie-like dimensions.

It's built to within its Twinkie-like performance.

It's built to within its Twinkie-like reliability.

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WORKPLACE

New guilds after young members

A SURVEY measure of the maturity of a profession is the number of the organisations its practitioners can belong to.

By this measure, the computer industry can be said to have come of age this spring, with no fewer than three such bodies welcoming programmers, operators and systems analysts.

One is the Institute of Mechanical Engineers, which recognises a new grade of member: the software engineer.

But more important are two new guilds being set up for the younger members of our industry.

One to be formally launched in July is actually a spin-off from the powerful Association of Business Executives. It will be called ABAC (Association for Business and Administrative Computing). Membership fees have yet to be announced, but a star-studded panel has. Chairman is Colin Milner, deputy director of North East London Polytechnic, and council members include ex-Labour minister Tony Reg Prentice and MP Christopher Price.

The other organisation, the Guild of Computer Practitioners, was launched last month. At its chair is one of the oldest hands of the training game, George Parkinson. He heads a group of computer training companies including the

London Compencentre. In 1960 he became managing director of the first independent College of Computer Education in the UK.

The two new organisations aim to fill a gap left by other professional bodies like the British Computer Society (BCS) and the Institute of Data Processing Managers (IDPM). Both BCS and IDPM serve the interests of more experienced computer people and their members have an average 12 years of experience.

The Guild was received with scepticism by the IDPM. "We wonder whether there is a place for an additional body," says the institute's George Penny, who is also chief operator in training for the National Computing Council.

Penny also dismisses the Guild's claim to be co-operating with the Council in training. "It is an exaggeration to say that the guild and NCC are collaborating," he says. "We're mildly interested."

But both the Manpower Services Commission and Cosit, the Computer Services Industry Training Council, welcome the new organisations.

"We profoundly disagree with the view that adult training places are not needed," says Hugh Sharp, head of computer operations at the MSC.

And Gordon Ewan of Cosit says:



Ewan . . . Welcomes new organisation for programmers and analysts.

Eight get hands on Ada

EIGHT programmers are a week getting their hands on Ada, a one week course given by CAP Group in London. The course is aimed at programmers familiar with at least one high-level language," says course leader Kim Griffiths.

The course lasts a week, with half the time given to lectures, slides, and half to practical writing programs on a Digital Equipment Vax computer using CAP's US-developed Telesoft Ada compiler.

The first course is limited to eight programmers, but CAP's products manager Richard Lever says that more will be held as demand dictates. The idea of the course, says Lever, is to spread the word in the UK that Ada is a very powerful language, capable of defence and commercial application.

"Telesoft has sold 250 of its compilers in the US, for development of systems," says Lever. "Over here we've got a great deal of interest, but I think people are waiting for the Ministry of Defence to show interest."

"Perhaps the MoD is waiting for full Ada compilers to be produced."

The Telesoft Ada compiler is not yet up to the standard for the language announced in February this year by ANSI, the American National Standards Institute. But Lever says that the next version to be released late this month will have the full ANSI standard syntax, although still lacking some of the more advanced language features such as generics and task types especially useful for defence applications.

But the version after next, expected in the autumn, will be a full one, and will be validated by the US Department of Defence which set up ANSI.

Meanwhile programmers on CAP's Ada course can use many of the language's features, including variable types and arrays.

Since 1969, CMC has enjoyed continual success in the British computer sphere, first as a pioneer of key-to-disc and data entry systems and subsequently as a designer, manufacturer and supplier of advanced local area networks, easy-to-use relational database mini and supermini computers, and innovative software tools.

For the past five of those fourteen years CMC has been a subsidiary of the worldwide Microdata Corporation. The association has enabled CMC to radically widen its horizons and manufacture in Britain for world, as well as British, markets and to collaborate on international high-technology research and development projects.

Now is the time for CMC to integrate more fully with its multi-national partners through whom a large and increasing proportion of output is exported. From now CMC's manufacturing and research interests will

become Microdata UK Limited and CMC's sales and marketing organization will become Microdata Information Systems Limited. Little else changes: we are still 1,000 Britons, we are still expanding at 35% per annum, we are still net exporters earning foreign currency, we

are still creating jobs (200 last year) and we still have a wealth of expertise of special relevance to the

computer needs of the public service sector.

Times top 100 companies, and, of course, export.

So from now please call us Microdata.

And, please, call us.

Microdata half-share in Telesoft's Ada compiler

Maylands House, Maylands Avenue, Hemel Hempstead, Herts. HP2 4RL
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Microdata: a McDonnell Douglas company.

Microdata.

A new way to say CMC



Microdata: we build understanding into computers



Castles make good computer rooms — the thick walls keep an equable climate inside.

Castle where an NCR is king

NRIL MacLeod left his computing job in Glasgow last September to become data processing manager at one of the few installations in the Paul McCartney country of western Scotland.

The installation can also claim to be one of the few to be housed in a converted castle.

"Castles make excellent computer rooms," says Neil MacLeod proudly.

"The stone walls are some two and a half feet thick and that helps keep the temperature and atmosphere stable."

The castle, home of Argyll and Bute District Council, is in a small town of 3,000 people, Lochgilphead.

MacLeod's job is to run local government packages on the Council's NCR computer, and install network of terminals at the seven area offices linked to Lochgilphead by private telephone line.

Argyll and Bute occupies more square miles than any other district in Britain, but has one of the smallest populations of just 65,000.

"This is the only installation for

Control Data gives seal of approval

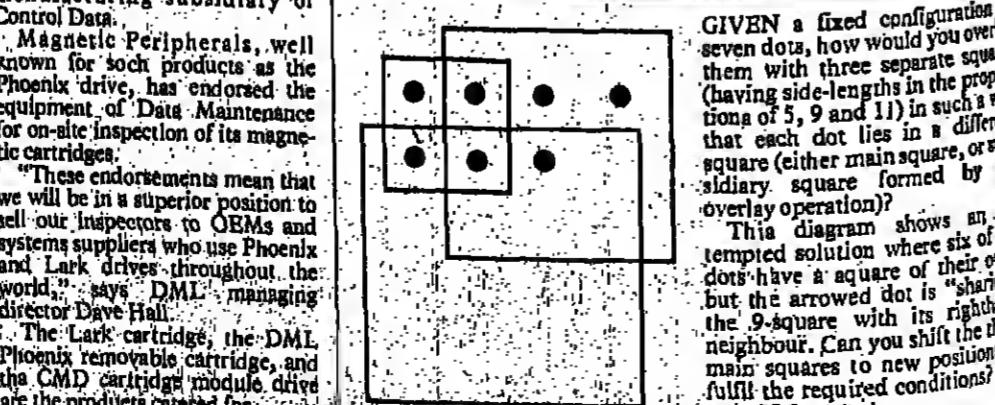
A LEADING UK specialist in disc maintenance has opened itself a big market by having its equipment approved by the peripherals manufacturing subsidiary of Control Data.

Magnetic Peripherals, well known for its products as the Phoenix drive, has endorsed the equipment of Data Maintenance for on-site inspection of its magnetic cartridges.

"These endorsements mean that we will be in a superior position to sell our inspectors to OEMs and systems suppliers who use Phoenix and Lark drives throughout the world," says DML managing director Dave Hall.

The Lark cartridge, the DML Phoenix removable cartridge, and the CMD cartridge module drive are the products covered for

page 55 for solution.



Bugs infect sick pay software

FEW people understand the workings of the new sick pay scheme inflicted upon us by the government this April. And unfortunately, the few that do understand it does not seem to include some of the software houses that wrote programs to implement it.

Many of the systems, particularly the smaller ones, to run the new Statutory Sick Pay (SSP) scheme, have the same two serious bugs, according to the Information Management Services. Many companies are likely to be affected.

Under SSP, employers are required to pay sickness benefit directly to their workers, and then regain from the DHSS by reducing their national insurance contributions. Under the old scheme, employers went to the DHSS themselves to claim sickness benefits for illnesses lasting more than a week.

The first problem with SSP software concerns weekly-paid employees. Their sickness benefit is

determined by averaging out their earnings over the eight weeks before the one they fall ill.

But if someone falls ill on the day that week's payroll calculations are done, it may be too late to include the sick pay calculation that week. Result: the wrong eight weeks are used to determine the average earnings.

But some SSP software systems only keep eight weeks earnings data, so by the next week details of the first of the eight weeks have been destroyed. Result: the wrong eight weeks are used to determine the average earnings.

Cure for bug: keep earnings data for 12 weeks before discarding it.

If you think that bug is exotic, wait for the next one. It arises when companies operate their own sick pay scheme as well, and when different days are used to calculate the amounts due for each of the

amounts due for each of the

Workplace is compiled by Philip Hunter

COMPEC SCOTLAND PREVIEW

Glasgow belongs to Compec — for a second year

Sarah Underwood previews some of the show's exhibits

DRESS rehearsals for the UK's largest computer show, Compec, are underway as exhibitors go north to Glasgow, the next venue on the Compec calendar.

Over 50 companies will display their wares at this year's Compec Scotland which opens on May 17 in Kelvin Hall, Glasgow. The three-day show, now in its second year, attracted 46 exhibitors in 1982, and 2,700 visitors.

Compec Scotland is sponsored by Computer Weekly and its sister journals.

While one exhibitor described his attendance at Compec Scotland as a "fairy finding mission", the majority already look it as a way of expanding into a region where the market is still in its infancy.

Among the big names at the show will be Hewlett-Packard, GEC Computers, Digital Equipment, British Olivetti and Racal-Milgo. The UK's microcomputer suppliers will also be out in force led by ACT Sirius, while Cifer Systems and Oxford-based Hytec Microsystems will be among those showing new products.

The Cifer Club low-cost micro, scheduled for launch in the first week of May, will make its public debut at Compec Scotland along with the first systems manufactured by Hytec, which until recently brought in US-made machines to which it added com-

munications capabilities, disc drives and other peripherals.

Cifer's desk-top micro, incorporating a 5 Mbyte Winchester disc drive and an 800 Kbyte floppy drive is built around two 280 processors and has a detached 100-key keyboard. At £3,395 for a system with 64 Kbytes of random access memory, the Club should attract a lot of interest, particularly as it is coupled with the promise of larger Winchatters with a capacity of up to 21 Mbytes and expansions of user memory of up to 256 Kbytes.

The company will also offer a £8,000-based 16-bit add-on board for the system with 256 Kbytes of RAM and the Unix and Idris operating systems. That will cost an extra £995, but will give users a single user desk-top Unix machine for £4,000 plus.

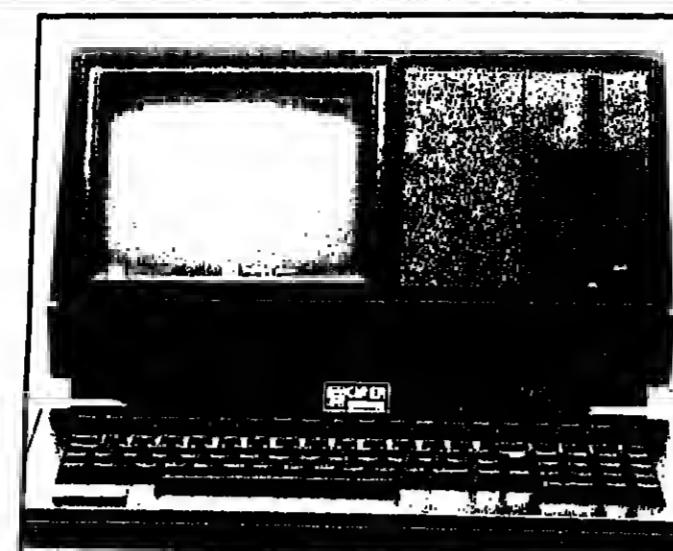
The new systems, like Cifer's existing intelligent terminals, will be marketed through OEMs and dealers. A spokesman for the company said: "Peritronic is our Scottish distributor — our products need representation in Scotland.

Compec is a good outlet for OEM volume buyers and the Club should appeal to general purpose users, for example, those doing commercial applications, while the Unix option will interest the education and research markets as well as software houses."

Hytec is also planning to use

Compec Scotland for first demonstrations of its Prelude range which goes from 16-bit terminals to a new 8-bit micro with 50 Mbytes of hard disc storage. Manufactured in the UK, the system is designed for growth and will be displayed alongside Hytec's latest network system.

Besides networking facilities the micro will have the communica-



The Cifer Club micro, which will make its public debut at Compec, Scotland.

tions systems designed by the company for the ECS Microsystems which it imports from the US. These allow the micro to be used as an online terminal to ICL mainframes, as well as Honeywell and Burroughs machines.

ACT Sirius will rely on tried and tested products to pull the crowds, although it is adding a regional flavour to its stand. Nine members of the Scottish Sirius Dealers Association will join ACT on Stands 227 and 327 over the three days of the show, where it will be exhibiting the faithful Sirius business micro along with the Winchester-based version of the system.

ACT's latest Writer range of printers and its desk-top photocopier will feature on the stands, while the Pulsar business software will be demonstrated on the Winchester Sirius which is now reaching the UK in volume shipments at a breakthrough price of £3,995 for a 10.6 Mbyte system.

A company spokesman com-

mented: "This is our first visit to Compec Scotland and we'll be targeting the business and industrial markets. Edinburgh University already has 60 Sirius machines and local industry seems to take a lead from what the local universities do — that has a good knock-on effect for us."

Computers' 4000 Series minicomputers.

GBC, making its first appearance at Compec Scotland, will display the desk-top 4150 system which costs upwards of £10,000. The machine will be used to demonstrate private viewdata systems for both business and commercial applications, including stock control and ledgers. The database management system Rapport suitable for the whole 4000 range, will also get its first public airing.

A GBC spokesman said: "We have a lot of customers in Scotland, particularly among the universities who use GBC Kit for communication networking. The 4000 Series is ideal as a communications node linked to a host computer or as a standalone system."

Communications companies will be well represented at the show, with Racal-Milgo and General Datacom among the better known names.

Racal-Milgo will be wooing Scottish agents and potential customers with the Planet local area network and a range of modems featuring Omnimode 48, a software based intelligent modem. Demonstrations of auto-diallers will also be running as well as the minicomputer-based CMS network management system.

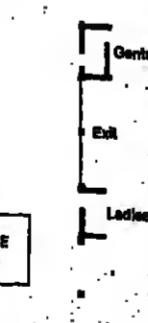
The Department of Industry is also eager to band out financial backing under its Microprocessor Applications Project (MAP). At Compec Scotland it will outline government support schemes for industry, which in Scotland has already benefited greatly from MAP funds, introducing micro-electronics into products, processes and control systems.

Examples of the MAP scheme's work in Scotland include the computerisation of a plant producing maltloafing: for whisky which received £22,000 towards the development of the £88,000 systems, and the development of a £52,000 monitoring system for oil rig designed by Banchory Instruments which won a £13,000 MAP grant.

As one of the project organisers put it: "MAP grants can be as high as 35% of development costs. The scheme started in 1978 with £55m to which £20m was added at the end of last year — and there's still plenty of money to spend."

COMPEC SCOTLAND '83

KELVIN HALL, GLASGOW
17-19 MAY 1983



Guide to Compec Scotland exhibitors

ACT	227/327
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Berkeley Computer Services	418/419
British Olivetti	121/123
British Telecom Scotland	414
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Thomas Hill International	403
Trend Communications	319
Willis Computer Supplies	708/709
Xylogics International	805/806

tunity to promote our products on a regional basis and to get to an unpenetrated audience."

Peripherals

manufacturer

Control Data

is also making a return visit to Compec Scotland, with its disc drives and tape de-

vices.

Removable, fixed and combination disc drives will be on display, including 8-inch drives with removable 80 Mbyte discs and small fixed disc products with a 160 Mbyte capacity. CDC's Finch Winchester system with 8, 24, 32 or 40 Mbyte capacity will be exhibited alongside the Lark, which can handle fixed or removable media or a combination of the two. In the 5½-inch range CDC has the Wren, a 19 or 32 Mbyte Winchester device.

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SOFTWARE MONTH



PENDLE . . . "Early systems little more than report writers."

How DP departments will support personal computers

AS in-house computer professionals, DP will probably end up providing much of the support for personal computers within corporate environments.

Supporting the computing needs of end users is nothing new to DP, and it has become accustomed to a relatively high level of support from hardware and software vendors.

Unfortunately, when it comes to vendor support for personal computers, there are going to be a lot of disappointments. Contrary to conventional wisdom, I believe that corporate PCs will eventually prove almost as hard to use as their mainframe counterparts, and yet, the service associated with them is far inferior.

David Mitchell, in charge of strategic planning for the 1,200-strong DP department, and Brody's boss, concludes that "in principle, the rise of personal computers isn't fueling us with anything new. We're very rigorously investigating different machines and software, but as far as support goes, we think the Information

Centre will be able to provide much of the support for personal computers within corporate environments.

So clearly we had to provide them with an Information Centre. Now that personal computers can do a lot of what would previously have been done on a mainframe, our Information Centre is evolving naturally to meet the new needs."

Now that personal computers can do a lot of what would previously have been done on a mainframe, our Information Centre is evolving naturally to meet the new needs.

Centre concept - or something very close to it - will suffice."

Of all the DP departments I have talked to, Standard Oil has probably looked at this question most closely, and Mitchell is right in suggesting that "Information Centres will become the nexus for the support of personal computers within corporate environments.

The experience of my own firm in providing personal computer products and services to DP departments also bears him out: the concept of the Information Centre is catching on rapidly as an effective means of PC support.

What, then, will these Information Centres have to do? The main task will probably be as follows:

Acquisition/Advice. Users need to be advised on what hardware and software to get. There are a lot of difficult questions to be answered, such as: does a financial planner need to use IFPS on his mainframe, or should he use a personal computer financial planning package such as DSS/Finance, or can he get by with a simple spread

sheet such as Visicalc? If an engineer wants to keep a database of test results, should he use an IBM PC with dBase II and Visiplot, or would he be far better off with an HP-120, the Condor database, and HP's excellent graphics? If a production line manager wants to develop a database of manufactured goods, should he use a simple package such as PFS to do this? Or will he rapidly start evolving his system into a full blown MRP system, in which case perhaps he really needs a carefully designed turnkey implementation?

Post-Installation Support. This covers a wide variety of services, including remote and on-site bug detection and provision of workarounds if available; remote and on-site assistance with package usage; an eight-hour a day general help desk; advice on mainframe data availability; provision of mainframe data advice on the correct interpretation of data; automatic back-up of user files; user file recovery; maintenance of personal computer database integrity; implementation of turnkey communications software; provision of refresher and advanced training courses.

Not all the post-installation support is technical in nature. A store of hardware, software, and supplies such as floppy discs and printer paper must be maintained, for distribution to users.

An inventory of the corporation's personal computer hardware and software will have to be maintained, to ensure that they are being used efficiently, rather than lying around gathering dust.

And various strategies will have to be adopted to discourage redundant development efforts by users, and foster the exchange of PC information within the corporation.

Clearly, then, the support burden isn't going to be light. DP will need all the help it can get, and the next article will review what can be expected from various suppliers.

Success story that started mythology

Probably the industry's fastest growing area

■ from page 19

a single Diablo daisywheel printer that he accepted the reports, saying: "I'm so glad you've abandoned those computers and gone back to typing my reports!"

"The early financial planning systems," says Pendle, "were little more than report writers, with only basic modelling capabilities."

Larry Kurtz, a director of Doric Computer Systems, agrees with this early trend. "The early problems," he says, "were overcome by the development of special financial planning languages and usually offered a supported service to help the users of the system. At this stage the typical financial models were long range plans. The models were developed so that senior management could see the effect that the model produced to differing assumptions of future volumes and associated financial values."

Very soon, the first spreadsheet

systems began to appear. "These were logically similar," says Pendle, "but not so named, as the contemporary microcomputer 'Calc' package. Fundamentally, these systems generated a language program that the user then 'ran' - so, in a sense, they were also early variants of today's program generator. Comshare's system in 1968 was called Dataform, but the company soon realised that this approach is both inflexible and insufficiently powerful."

Instead, Comshare, and all its rivals, began to develop a modular logic file approach. This type of system splits the model into several component parts, where the data matrix, for example, is held separately from the relationship rules.

This view is echoed by Dick Moore, technical director of Peachtree Software International (suppliers of PeachCalc), who states: "We find that businesses now view an electronic spreadsheet as an essential piece of equipment - just as pocket calculators gained acceptance about 10 years ago. The software is becoming more comprehensive and once the user has the spreadsheet on his desk he is using it for an incredible range of applications."

From here, and throughout the 1970s, developed what Pendle calls "the second generation of financial modelers." To begin with these were primarily developed by the end user, with varying degrees of aid from the bureau company, and include FCS and PlanMaster. These two were originally developed from within Unilever and Wiggins Teape respectively.

In 1973, EPS consultants was formed to market FCS as an international time-sharing service. Says Peter Morell of EPS: "Financial planning evolved originally from a time-sharing bureau offering to an in-house mainframe offering as a result of bureau expenditure becoming too heavy. Then the micro entered the market as an entry level for users requiring some form of automation."

"This micro-planning market is, today, probably the fastest growing and most rapidly developing area of the computer industry. Hardware has grown in the last three years from the low-powered eight-bit CP/M-based systems to the current range of MS/DOS and multi-user Unix based systems such as Sirius, IBM, Fortune and Zilog (and, of course, we are already seeing the futuristic 32-bit micros such as the Sogo IV based on the Motorola 68000 chip)."

"Software has also developed rapidly from the Visicalc simple spreadsheet type of system to Micro-FCS (the micro version of FCS-BPS) with the ability to perform a wide range of complex functions."

"They have also been used by companies seeking financial support from the bank."

The advent of the micro into

financial modelling is viewed

differently from different

standpoints.

"Financial planning programs on microcomputers," says Graham Summers, managing director of Planning Consultancy, "has been one of the major reasons for the growth of microcomputers over the last few years. Programs like Visicalc from VisiCorp, and SuperCalc from Sorcim, have provided the user with a quick and easy way to analyse numbers. This type of program has been labelled 'spreadsheet' because it tends to replace the columnar type of analysis paper used for financial

systems.

It is becoming increasingly apparent that it is not the mainframe that is under threat from the micro, but the minicomputer.

The likely future is that more

and more powerful microcomputers

will link together under local

area networks, and be backed by

the power and storage capacity of

the mainframe.

While on the one hand some

mainframe users are buying and

installing Z80 cards so that the

mainframe can use MicroPro products

such as WordStar and

CalcStar, so are many current

users of micro spreadsheets begin-

ning to demand the power and

flexibility of module based, logic

file systems" (such as Micro-Mo-

deiler).

PlannerCalc was conceived as an

entry-level product - not so much

in its capabilities as in its price.

With a brilliant stroke of mar-

keteting, PlannerCalc literally expl-

oded into an already crowded

market.

Comshare virtually gave away

the product at less than £30. And yet its power and versatility is

similar to competition at five times

the price.

While later the product has

been repriced at a more realistic

£89. But the objective has been

achieved. Market awareness of

PlannerCalc equals that of Visicalc

and SuperCalc, while many

call it sales exceeding both.

MasterPlanner, its big and even

more expensive brother, is

PlannerCalc plus. It is a

spreadsheet system and a logic file

system, thus providing the ad-

vantages of both approaches.

It has two other important char-

acteristics. In the first place, it can

switch between the one and the

other; and if the user edits the

model in one mode, the other is

automatically updated.

Secondly, PlannerCalc files are

totally compatible with Master-

Planner, thus providing an easy

evolutionary path for the growing

company.

Software compatibility domi-

nated the Comshare approach

to the financial planning market.

Its next level product is

FastPlan, a

traditional bureau product that

is now available on in-house

machines. It is not as easy to use as

its micro cousins, but it is more

powerful and flexible, and it can

use the same data files.

PlannerCalc (or MasterPlanner)

says Nigel Pendle, "is for

somebody who does financial

planning; FastPlan is for

somebody whose job is financial

planning."

But the flagship of the Com-

share suite of packages is Wizard.

Pendle explained,

"is the fruit of large scale (55m)

research and development in the

UK based on considerable

previous experience in the field.

Little of it is completely original,

but it does represent a unique

combination of all the best tried

and tested approaches, put to-

gether in an easy to use form."

"For the future," he continued,

"we believe that the total active

sales life of a product like Wizard

is about ten years, assuming con-

tinued and intensive R&D. We

currently have more than 30

people working full-time on the

development of Wizard, and this

number is likely to increase in the

future."

"In general, we can say that the

era of dumb terminals is very near

the end. All access to mainframes

will soon be done via personal

computers. All important user-

friendliness is dependent on

processor power with a user, not

hidden away in a remote main-

frame."

"We see the future of Wizard in

distributed modelling, with more

and more power moving out to the

micro. This theory is likely to be

come true when machines with the

power of the Perq come into the

market."

Processing power directly allows

planning to be a continual process

rather than an annual activity.

Why Unix has become the industry's big talking point

Unix is often mentioned in the computer press these days, but how many know the reason for this, or even what Unix is? If they know that Unix is an operating system, how many know what kind it is, and why it is so often compared with another operating system, CP/M? On these two pages MIKE BRINSFORD explains why Unix is of such

great interest in the computing community at the moment, how it came into being, what its features are, and how it relates to CP/M, especially with respect to software portability. And he discusses the ways in which Unix can be used in a commercial environment including how Data Logic has used it as a software development tool.

DATA LOGIC first became involved with the Unix System (which is more than just an operating system) about three years ago, and since then the company has evaluated it, analysed it, and put it to practical commercial use, to the extent that it now has more than 50 designers and programmers who have worked with it.

Currently Data Logic is undertaking both project work and studies involving the use of Unix for systems and software development applications. So it is in a position to try to answer the frequently asked questions for those who wonder what this Unix discussion is all about.

Unix is a Time Sharing System (TSS). Originally it ran on a variety of minis, especially PDP-11s, but now runs on 16-bit and even eight-bit micros.

The design is simple and the code compact, so the number of users who can be concurrently supported depends strictly on the hardware resources available, with few constraints from the operating system.

It is ironic that, to some people at any rate, one of Unix's rivals today is CP/M, which is a single-user access, interactive system, because Unix was originally similar although it is now very much a multi-user access system.

In this sense Unix was well ahead of its time when first developed, circa 1970, when systems were always either batch (single-user, non-interactive) or TSS (multi-user, interactive).

A TSS provides a much more friendly user-interface and quicker turnaround than a batch system but unfortunately, in those days or any rate, TSSs ran on large expensive mainframes.

So Unix was begun at the Bell Telephone Labs, in New Jersey, in an engineering/R&D environment, with the aim of creating a more productive programming environment than those available in the absence of a large TSS.

The author of the first version (K. Thompson) found he had personal (ie single-user) access to a little-used DEC PDP-11 minicomputer, and he first developed the interactive aspects of a TSS on it, without the multi-user access.

Unix was thus named for "unibus Multics", after the TSS-front-runner of that time, and possibly even now.

As the original program development facilities of Unix became more popular at Bell, it soon evolved into a multi-user system, so as to make better use of the



The author, Mike Brinsford, is marketing director of Data Logic.

1970s to 600 installations by 1978, and over 300 non-Bell installations by mid-1979.

This Unix popularity was mostly in the universities and R&D labs, and was perhaps not unconnected with the fact that Unix ran on PDP-11 first and foremost, but it did lead to a tremendous growth in software additions developed by users and in the public domain, in the line of compilers, text editors, debugging aids, document preparation tools

(eg word processors, typesetting programs), etc; plus a large number of less useful "recreational and novelty" programs.

In addition, in view of the environments in which Unix evolved it was gradually adapted for ease of use in experimental, real time, situations, including early computer networks.

This evolution of the Unix software in a small computer environment, with each increment of change developed on the Unix system itself, has given Unix the attributes which make it commercially attractive today - compactness, portability, reliability (or at least stability) and software abundance.

Essentially Unix consists of a basic operating system, known as the Kernel, plus over 100 subsystems which run as user processes controlled and scheduled by the Kernel.

In a configuration which supports up to 50 simultaneously opened files, for example, and up to 64 concurrent processes, and has drivers for six different types of device, the Kernel occupies about 90 Kbytes of memory on a 16-bit processor, and half of this is buffer and table space (for files, devices and processes). This becomes about 110 Kbytes on a 32-bit processor.

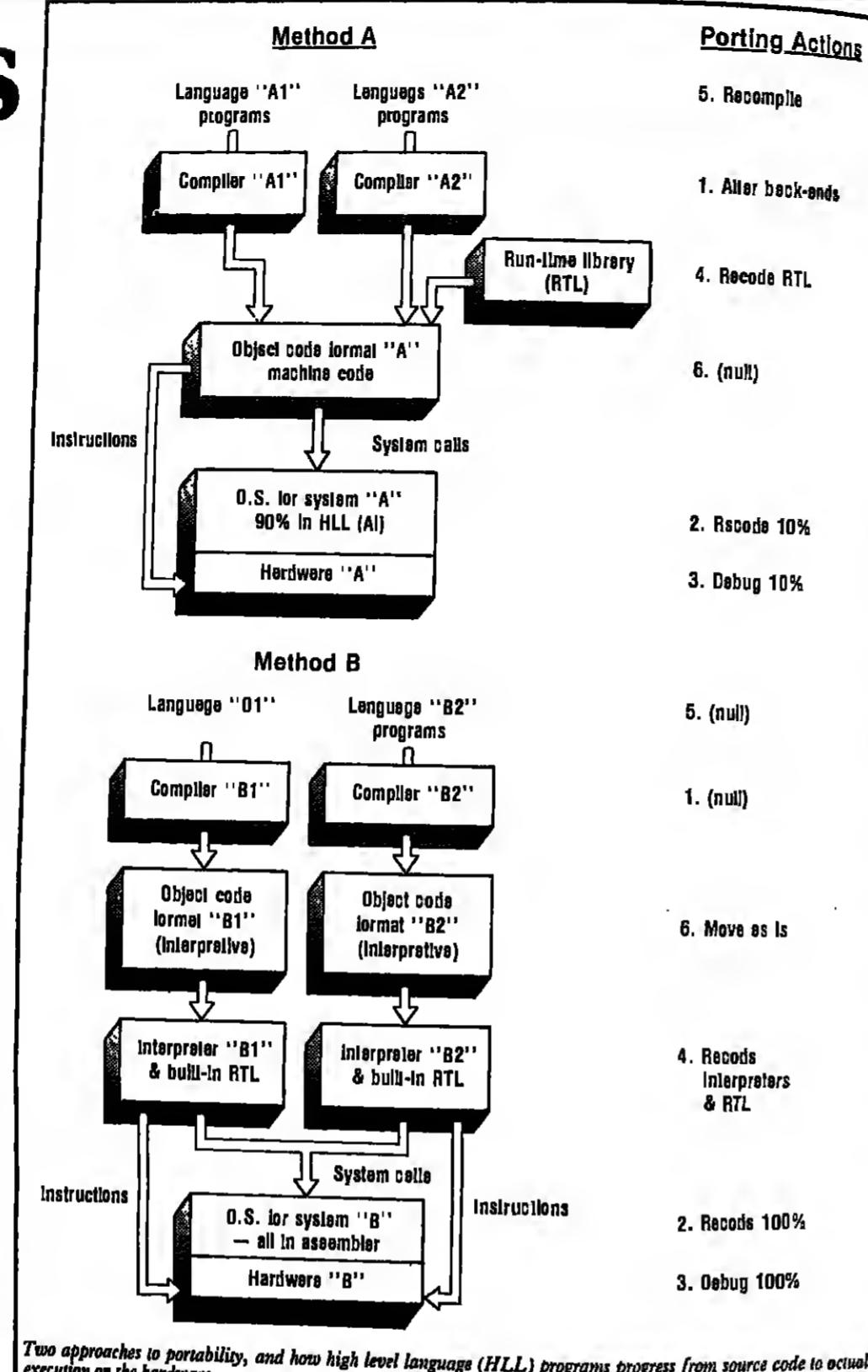
The main features of Unix are:

- A uniform system of file and inter-process I/O.
- Ability to spawn autonomous processes from any process.
- High degree of portability.
- System command language is selectable on a per-user basis, and is not processed by the Kernel but by a user process.
- Multi-level file naming and access control system, with dynamically growable files and mountable volumes.

The Unix Kernel is in 3 parts, providing the following functions:

1. Process Management: Process creation and (shared) program execution, swapping, process synchronisation, resource allocation, process scheduling.
2. I/O System: Secondary storage "block" I/O with a cache buffer system character device I/O, device drivers.
3. File System: File naming, access control, disk space allocation, file sharing, "pipes" (ie inter-process communication via unnamed FIFO files).

This Unix popularity was mostly in the universities and R&D labs, and was perhaps not unconnected with the fact that Unix ran on PDP-11 first and foremost, but it did lead to a tremendous growth in software additions developed by users and in the public domain, in the line of compilers, text editors, debugging aids, document preparation tools



Two approaches to portability, and how high level language (HLL) programs progress from source code to actual execution on the hardware.

- Login and Logout of Terminal User.
- Output spooler.
- Shell command language interpreter.
- Assembler.
- C object code binder.
- Linking loader.
- Compilers for C, Fortran 77, Basic, Snobol, APL, Algol 68, Pascal.
- Program verifier for C programs.
- Graphics packages.
- Typesetting programs.
- Word processors.
- Syntax analyser and lexical analyser.
- Electronic mail.
- Unix-to-Unix file copy.
- "Make" — source and object code maintenance system.
- File back-up and archive.

Commercial interest in Unix began when the very cheap, very reliable, micro-chip processor arrived.

Cheap, reliable, hardware is of no use without cheap, reliable software to sell it, and Unix had become a possible source for such software as far as some entrepreneurs are concerned, at least for 16-bit micros. CP/M, the single-user operating system for 8-bit processors, is another because it became the first operating system developed purely for a micro to acquire a sizeable number of Cobol and Basic commercial packages, initially for the personal computer market.

For this reason alone, although Unix and CP/M are as different as chalk and cheese, they are often linked together in the probably irrelevant but apparently burning question as to which OS will become the standard for 16-bit micros.

the first system on the second, so that the porting or conversion task is relatively simple.

1. Alter compilers' back-ends to generate second hardware code.

2. Rewrite OS in second hardware Assembler language.

3. Debug OS.

4. Rewrite and debug the runtime (high level language support)

5. Recompile.

6. (null)

SOFTWARE MONTH

The Unix onslaught

Is there a comparable OS available for the price?

From page 22

Two further points to notice with regard to the portability of Unix and CP/M software are that C programs written to interface to the C portable run-time library only, ie containing no system calls, can also be run under IBM's OS or Honeywell's GCOS; and that application packages written in Cobol or Basic to "run under CP/M" can in fact run under any system on which the interpreters can run, provided that the system provides equivalent I/O facilities and file formats to those provided by CP/M.

Therefore now that Basic and Cobol interpreters have been commercially developed for Unix and its derivatives, the question as to whether Unix or CP/M becomes a standard for applications on micros could soon become academic - especially if Basic and Cobol interpreters will become the standard for micro-based applications.

How much use then is Unix in the commercial world to-day?

First, it is a good multi-user development system that can run on mid and micro-based hardware. Secondly, Unix can provide an instant product-base for multi-user interactive system software. This is particularly true if the system being developed is general-purpose.

The principal remedies for these problems which we adopted were first for Data Logic to write a DBMS which sits on top of the Unix file system and provides a relational database facility with five types of access path within such databases: SAM, ISAM, DAM, HRAM (Hashed-Random) and LIAM (Linked-Indexed, eg for WP).

The second remedy adopted was to use Xenix instead of Unix, which helped us overcome such major problems as file system integrity, inadequate inter-process communication, and inadequate error detection/prevention.

Using Xenix as a product-base probably saved us in the order of 25 skilled man-years when compared to starting from scratch. Product control software, the DBMS and the initial applications are all written in C (only the most hardware-oriented pieces of software are in Assembler).

Secondly, Unix can provide an instant product-base for multi-user interactive system software. This is particularly true if the system being developed is general-purpose.

Data Logic has been using Unix for the last two years in the development of new software and hardware products, having evaluated Unix both as a development system, and as a possible commercial product base.

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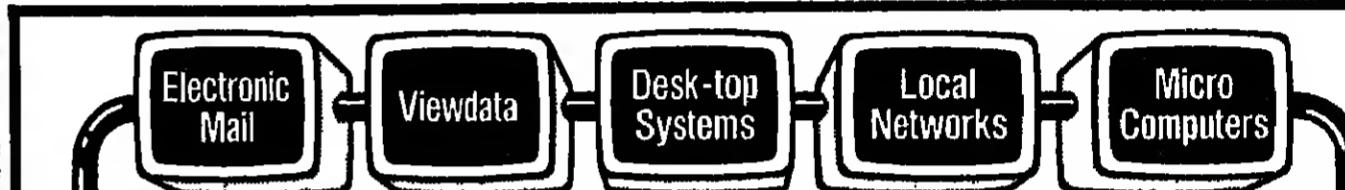
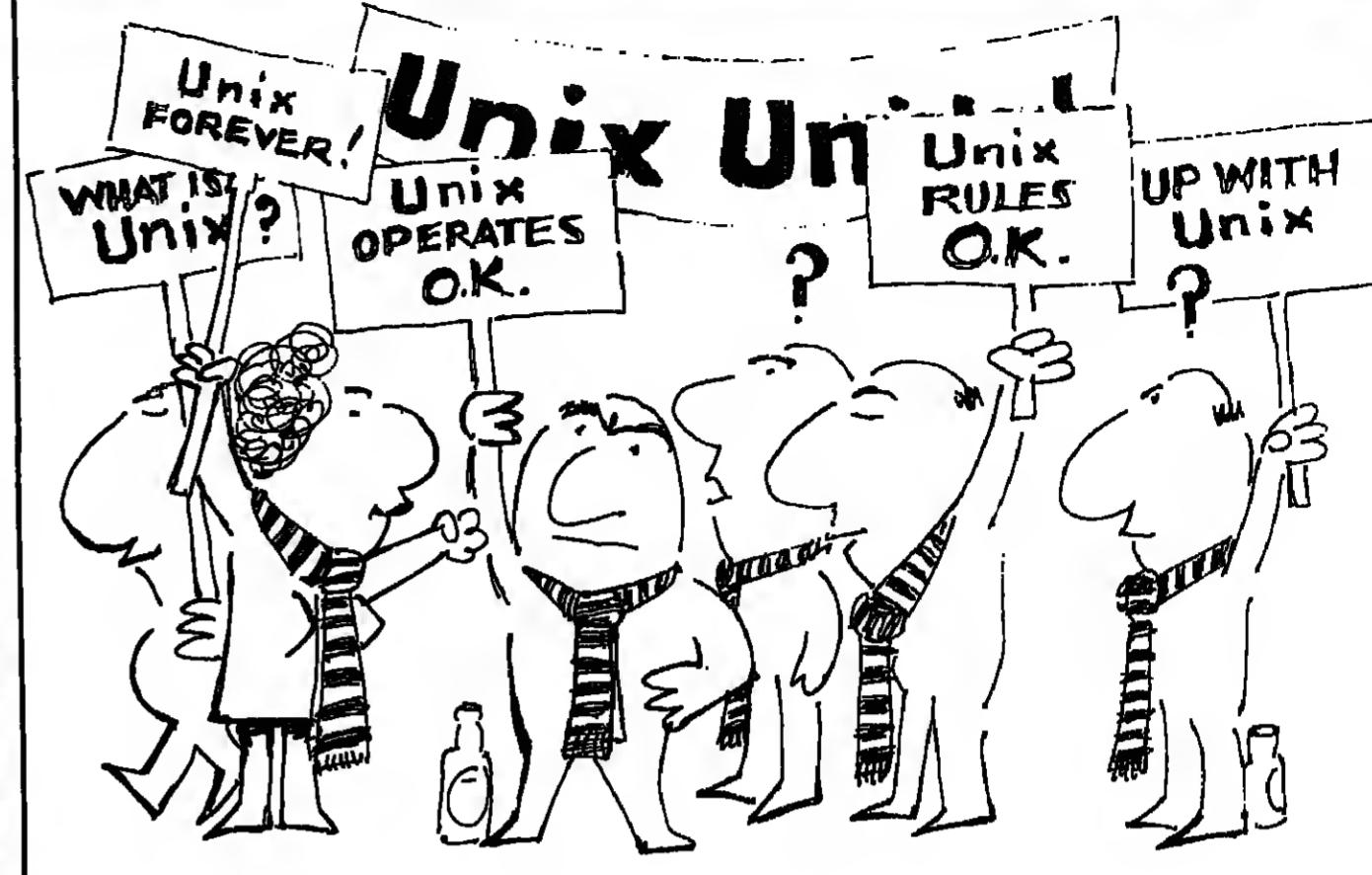
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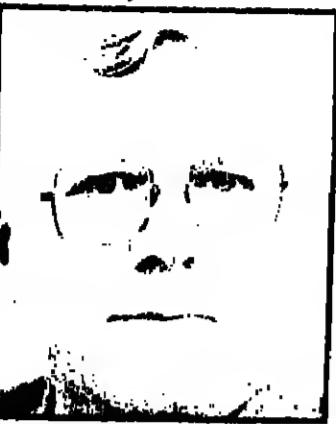
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CW out of tournament

BRITISH Aerospace has knocked Computer Weekly out of the Wright Line squash tournament. Playing in their home court at Kingston, Surrey, the British Aerospace team scored a convincing 3-0 victory.

Phil Bolton, the British Aerospace number one, beat CW's Julian Bidlake 9-4, 9-2, 9-0. Simon Radley, in the number two spot, dropped the only game of the evening to the CW squad. He beat editor David Craver 9-3, 9-5, 8-10, 9-2. Stan Williams put on the finishing touches with a 9-2, 9-1, 9-1 win over Chris Prier.

CAP has formed three operating regions to strengthen its position as an international systems contractor. John Ockenden will manage the UK activities; John Ritchie is responsible for Europe and North America and Alan Benjamin will look after South-east Asia. All are CAP group executives.



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CONFERENCES
The Technology Transfer Society is holding a conference on flexible manufacturing systems (FMS) in London from June 2-3 and in Paris from June 6-7. The conference features industry and academic experts from the US, Europe and Japan, who will examine the critical issues involved in FMS, implementation, including new technologies and management strategies, case studies and guidelines for selection and implementation. Details from State of the Art Ltd. Tel: 01-242 4045.

■ David Tilsey has joined ADP Network Services as account executive for its financial district. He was previously with Computer.

■ MDS Computer Systems (UK) has appointed Geoff White (below) to the position of key account sales executive. He joins MDS from his own business where he was selling microcomputer systems to a variety of markets. Before he was with Control Data for five years.

■ Michael Roper has been appointed engineering manager at DDC. He was previously a group leader at Marconi Communication Systems. Keith Fewick, previously a project consultant with STG, joins the company as manager, hardware development. And Michael Graham has been named marketing manager. He was formerly in marketing with DDC's parent company the M/A-Com Group.

■ Adrian Tovey has been promoted to disc product marketing manager at Newbury Data Recording. He was formerly technical support consultant.

■ Computer Technology Ltd (CTL) has appointed two group managers to develop its interests and involvement in the aerospace and medical markets. Rodney Howlett has been appointed aerospace sales manager. He was formerly marketing manager at Kontron Computers. Colin Faasid is medical systems group manager. He previously worked for Seicon as applications group manager for three years.

■ CAP has formed three operating regions to strengthen its position as an international systems contractor. John Ockenden will manage the UK activities; John Ritchie is responsible for Europe and North America and Alan Benjamin will look after South-east Asia. All are CAP group executives.



Lynda Sable, who has been in the computer industry for 20 years, has accepted a leading role in the management team at Peterborough Software. She has been named manager, pensions systems, and will hold responsibility for the marketing, implementation, support and future developments of the company's Unipension package. She has been with the company for six years, most recently as Northern region sales manager. Her previous experience in the industry has included programming, project leading, DP recruitment and sales and marketing.

■ Daniel Nicholas, who joins Prime Computer has appointed Brian Hamilton as area sales manager for its South-west region, based at the company's Bristol office. He joined the company five years ago as a sales executive.

■ John Freck (below) has been appointed sales engineer, computer peripherals, by 3M's data recording products group. He was previously with word processing specialist AES Data, where he was product technical manager.

■ Following the government's approval for a new cabling of Britain, British Telecom has appointed an assistant managing director responsible for broadband services. He is Dougal Wray, currently director of BT's business planning and strategy department. Wray will direct the company entry into the cable television market and promote its role in local broadband networks.

■ Tim Bishop has been appointed director of consultants Spicer and Pegler Associates. He was previously director of management services at Arthur Young.

DIARY
MAY 17
The 15th Edition of the IEE Wiring Regulations, IEEB, Lecture Theatre J002, Edward Herbert Building, Loughborough University, 7.30.

MAY 18
Demonstration of Prestel. — speaker from British Telecom. IDPM Kent branch, The Oak Room, Royal Star Hotel, Maidstone, 7.45.

MAY 25
Telecontrol of Electricity Distribution. IEEB, The Polygon Hotel, Cumberland Place, Southampton. 8.30.

JUNE 1
Computers in court — DP and the law. IDPM Central London branch, Altergo, 15-19 Kingsway, London WC2. 6.00

Privacy — data protection legislation, by Michael Wood of the NCC. IDPM Sussex branch, Room G27, Mithras House, Brighton Polytechnic, Moulsecoomb, Brighton. 7.00

JUNE 7
Social evening. IDPM Birmingham branch. Tickets at £3.50 are available in advance from the secretary. Buffet and skittles included in cost. Members may bring along non-members as guests. Tel: (021) 550 0375. Selly Park Tavern, Pershore Road, Selly Park, Birmingham. 7.00

JUNE 8
Chloride Standby Systems. IEEB, Polygon Hotel, Cumberland Place, Southampton.

CONFERENCES

The Technology Transfer Society is holding a conference on flexible manufacturing systems (FMS) in London from June 2-3 and in Paris from June 6-7. The conference features industry and academic experts from the US, Europe and Japan, who will examine the critical issues involved in FMS, implementation, including new technologies and management strategies, case studies and guidelines for selection and implementation. Details from State of the Art Ltd. Tel: 01-242 4045.

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business as yourself, to compare notes and to enjoy refreshment as you take on board some rather interesting new concepts.

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COMPUTASTARS FIRST REGIONAL HEAT

Kalamazoo do it again—but watch the Widows



Alison Grant continued her 1982 winning form, finishing 28 points clear at the end of the day.

WOULD they or wouldn't they? That was the question.

Was it possible that last year's European champions, Kalamazoo, would be beaten into second place by Scottish Widows in their first Computastars appearance? It was a pretty close run thing right up until the last moment when Kalamazoo managed a victory by the slim margin of 15 points.

First event of the day was the return of an old favourite—throwing the medicine ball.

"But we haven't practised that," whined one team. "We've only done shot, discus, javelin and cricket ball!" As old Compuastars hands will tell you, the only thing you can expect is the unexpected.

Slipping in the medicine ball throw was the men's team from Bl. Systems. Team champion Colin Worthington shared the honours in the individual competition, matching Horizon 2's number one Greg Delaney's per-

formance exactly.

In second place was Phil Wright, the new number one of the legendary Kalamazoo A team, last year's European champion Jeff Harrison returning to the ranks.

The women's throwing result was rather as expected, Kalamazoo ladies starting a run of five victories. But it was Janet Blecker of Horizon who won the individual event in her first Computastars.

It was looking very much as if Kalamazoo was destined to walk away with the competition, but the team sprints and 100 metres

proved that this was by no means a one-horse race.

For Scottish Widows, in their first Computastars main competition (the veteran team from 1982 were back—more of them later), took the team and individual titles in these two events, sharing the former with the Open University.

But in the women's competition, all was going according to the Kalamazoo plan, the first five events going their way. After those five events, they had drawn out an unsatisfactory lead of 33 points over second placed Bass Specials.

Report and pictures by Andrew Thomas.

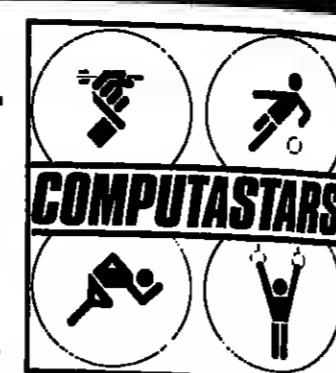
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Potential 1983 European champion? Kalamazoo's Phil Wright.



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COMPUTASTARS

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But, for a lime, Kalamazoo captain Richard Jeffcott was a worried man. "Who are these Scottish Widows?" he asked me, looking rather less confident than usual. "If they run a good relay, they could just about pip us at the post."

"There will be some Scottish widows if that happens!"

And what was this? In the women's competition, newcomers Bass Specials had won both the football and the jumps, but by this time Kalamazoo had a secure lead, and the ladies didn't look quite as concerned as their male counterparts.

Their confidence was rewarded by victory in the 1600 metres, and a convincing 62 point win over the Bass Specials. Both teams go on to the UK final later this year.

At the end of the day it was a relieved Kalamazoo team which took the team and individual honours, sending two teams to the finals. But watch out for those Scottish Widows. They nearly did it this time, and the UK final promises to be just as exciting.

Elegant footwork from the Fisons

Bass Specials finished second in the team sprints. Team champion Carolyn Brice completes one of 40 sprints in the allotted two minutes.

COMPUTASTARS FIRST REGIONAL HEAT

Oh!... so it's that way



Scottish Widows had obviously done their homework and knew what to expect. No wonder they almost won.

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The brilliant new Commodore 700 is arguably the most aesthetically pleasing micro-computer ever designed.

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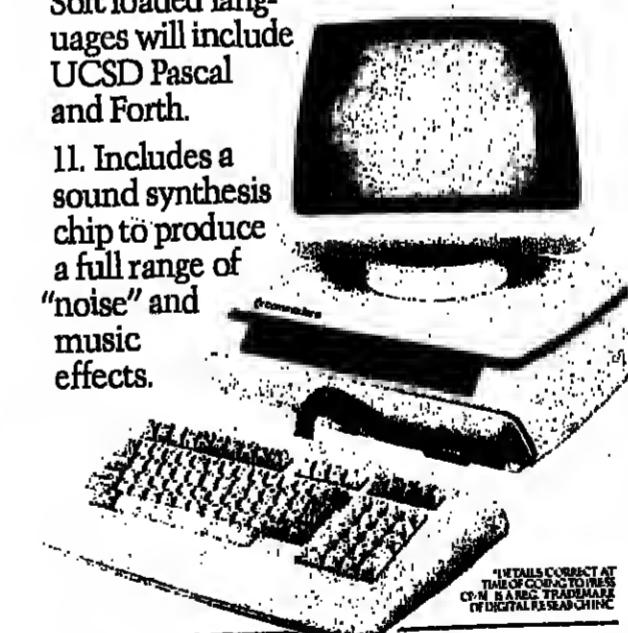
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SUMMARY SPECIFICATION

1. Tilt and swivel anti-glare 80 column green-on-black display screen.
2. Comfortable, easy-to-use detached keyboard with sculptured keys, separate calculator pad, isolated critical operation keys and separate cursor controls.
3. Ten special function keys are programmable in BASIC or machine code to execute twenty special operations.
4. Capable of addressing 896K of user RAM. Available with either 128K or 256K as standard. Configured in 64K banks with switching managed by the 6509 processor.
5. The full RAM is available for machine code programs. BASIC programs can be up to 64K in length with the remainder of the RAM available for variables and/or data.
6. Integral dual disk drives with direct memory access available as an option.
7. An optional dual processor—the Z80 or 8088—can operate concurrently with the standard 6509. This enables access to the existing library of CP/M® programs.



COMMODORE
COMMODORE 700

For a thousand words and more on the Commodore 700, and the address of your nearest Commodore dealer, telephone or write to us at:
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Telephone: (0753) 79292.

NAME (MR/MRS/MISS) _____

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Birmingham points

MEN'S TEAMS

Name	Points	Total
1 Kalamazoo A	30	273
2 Scottish Widows	25	258
3 Kalamazoo B	24	238
4 Open University	20	222
5 Bass Specials	20	218
6 Fisons	28	215
7 British Shoe Corp	26	212
8 CSP	17	212
9 Scottish Widows Veteran	24	209
10 Kalamazoo C	24	203
11 British Shoe A	39	197
12 British Shoe Veteran	30	197
13 VAG	19	193
14 Horizon t	24	171
15 Fletchers SVS	21	168
16 Horizon 2	27	165
17 Fletchers	22	149
18 Grand Met 1	15	148
19 Grand Met 2	18	148
20 Probe Data	30	140
21 British & West Soc	19	139
22 Grand Met 3	17	120

MEN'S INDIVIDUAL

Name	Points	Total
1 Phil Wright	13	100
2 Bernie Callaghan	10	92
3 Malcolm Shuttleworth	9	85
4 Richard Downes	12	81
5 Roland Gibbard	8	78
6 Chris Stack	5	76
7 David Price	6	75
8 Colin Worthington	11	72
9 Veteran	6	69
10 Kevin Morris	9	67
11 Francis Sciliano	9	67
12 Greg Delaney	8	65
13 Paul Yerrell	7	58
14 David Harris	6	57
15 Eric Gibson	7	55
16 Ian Cleare	7	55
17 Martin Veryard	6	54
18 Geoff Watts	7	53
19 Paul Jackson	9	51
20 Geoff Watts	8	51
21 Keith Williamson	6	46
22 Nigel White	3	41

WOMEN'S TEAMS

Name	Points	Total
1 Kalamazoo	29	287
2 Bass SVS	24	225
3 Open University	20	212
4 Sheffield Insulating	21	204
5 Horizon	18	154

WOMEN'S INDIVIDUAL

Name	Points	Total
1 Alison Grant	9	93
2 Carolyn Brice	4	65
3 Carolyn Brice	8	60
4 Geraldine Vale	6	58
5 Janet Blecker	10	47

Events (left to right): Medicine ball throwing, hockey, long jump, sprints, 100 metres football, jumps, 1600 metre relay. Scoring by Commodore Computer.

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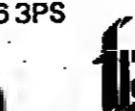
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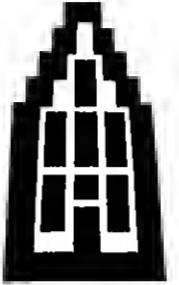
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PROFILE: A leading Systems Supplier and Consultancy has retained Logistix to assist with the recruitment of a number of Project Leaders, Applications and Systems Programmers. The major areas of activity focus upon the development of multi-microprocessor applications and the design and implementation of real-time industrial and process control systems. The Company is recognised as a market leader in innovative software and system development and provides a well-defined career path for the technically motivated individual who wishes to work in a stimulating and challenging environment.

PROJECT LEADERS: Aged around 30 years and with a minimum of seven years' industrial experience, your career to date should preferably have progressed through Designer level to your current position where you have project control responsibilities. Successful candidates are likely to have current relevant experience within microprocessor systems development or the implementation of real-time industrial control and monitoring systems. In addition, you should be able to demonstrate an aptitude for proposal writing and have participated in project costing and resource management. Whilst the majority of project work is located in Central London there will be occasional U.K. site visits.

APPLICATIONS and SYSTEMS PROGRAMMERS: Aged 22-26 years and with a minimum qualification of H.N.D. or B.Sc. and at least one year's industrial or commercial experience. Ideally, you will have some knowledge of Intel microprocessors using PL/M as the principal programming language with PASCAL, a very useful secondary language. However, candidates who are familiar with other microprocessor systems will certainly be considered. For certain positions, it is mandatory to have an in-depth system programming knowledge of Intel's RMX operating systems and development tools. Candidates with an M.Sc. or Ph.D. are encouraged to apply if they can combine an academic background with relevant practical experience.

BENEFITS: In return for your personal commitment and technical skills the Company offers an excellent salary together with an outstanding range of ancillary benefits.

APPLICATIONS: Please submit a well-documented résumé or alternatively telephone one of our Consultants quoting Ref. LIS/3
Lic No. SE 883

Computer Professionals

4, Kendrick Mews, London SW7 3HQ Tel: 504 8790

Systems Engineers

London Based £11-17,000
A large consultancy/systems house needs staff with research or defence project experience in the areas of navigation, signal processing, underwater technology, automotive engineering, electronics or communications. Candidates should be knowledgeable about good quality software and systems design. Ref 1205/A

RPG II/III Experts

West London £13-15,000
Hugely successful systems organisation needs real experts on RPG II or III to lead various projects. Applicants must have the personality to complement their above average skills to be offered our client's above average rewards and opportunities. Ref 1205/B

Systems Analyst

Herts £9-12,000
A well-established distribution organisation requires two analysts with at least two years' experience of commercial systems. For the more senior position a background in programming and experience of accounting systems is desirable. Attractive location, good salaries and relocation assistance offered. Ref 1205/C

CORAL Programmers

North Hampshire £8-14,000
Expanding software house specialising in real time software development in the military and industrial systems field requires additional staff. For the junior positions six months' programming experience using CORAL is essential. More senior candidates will also need experience of GEC 4000 or DEC equipment. Ref 1205/D

Systems Designers/Programmers

Surrey + Overseas Possibilities Up to £12,000
Additional staff with an Honours Degree in Computer Science or related discipline are required to develop software and systems for non-stop applications including reservations and communications. Fluency in Fortran or Pascal on PDP 11/VAX is essential and knowledge of an assembler is desirable. Ref 1205/E

Computer Professionals

4, Kendrick Mews, London SW7 3HQ Tel: 504 8790

Analyst Programmers

London and West £7½-10,000
A systems house specialising in the development of sophisticated systems for the finance sector wishes to recruit keen programmers to be involved in a range of activities encompassing systems design, programming, consultancy and user support. A minimum of 12 months on-line programming experience is required and a mature, flexible and professional attitude is of prime importance. Ref 1205/F

Real Time Professionals

Surrey Border £8-18,000
High technology systems house needs programmers, designers and consultants to work on the development and implementation of high reliability, fast response defence, information and communications systems. Candidates must be educated to degree level and possess at least two years' real time systems experience. Knowledge of Argus or VAX would be of particular interest. Applicants should have the personal qualities to succeed in a consultancy environment. Ref 1205/G

Analyst Progs & Systems Progs

North West London £11-14,000
Our client is the UK subsidiary of a major US systems house specialising in on-line systems on Tandem computers. Due to a growing order book they need additional staff to work in the areas of Electronic Funds Transfer, Message Switching, Reservation Systems and Videotext Services. To apply, Analyst Programmers must have four years' experience in Interactive Transaction Processing, Database or Retail Banking Systems. Systems Programmers - at least two years on one of the following: Message Switching Systems; Communications Software; Operating Systems Development; Device Handler Development. Ref 1205/H

For further information, write to Computer Professionals quoting the advertisement reference no: alternatively phone Isobel Bruce or David Fletcher on 01 584 8790.

CP Computer Professionals looks after the professionals.

IBM Project Manager

West London £16-19,000
A consultant is needed with absolutely top class IBM project design and management skills. Substantial experience of CICS and DL/I as applied to a range of commercial applications is required with the inter-personal skills to deal with clients. Ref 1205/J

Police Systems

Berkshire Approx £14,000
Project leaders and programmers with experience of Police or similar command and control systems are needed to meet new orders obtained by our client. Knowledge of Ferranti computers is necessary for the senior position and advantageous for the others. Excellent employment conditions and career prospects. Ref 1205/K

Analyst Programmers

London/Overseas Up to £12,250
Systems house with worldwide client base needs Hewlett Packard experts to work on bespoke versions of complex order processing software. Specification and implementation can be overseas - development in London. Five years' experience, the last two on HP 3000 is needed for these positions. Ref 1205/L

Electronics Engineers

Surrey Up to £12,500
Vacancies exist for candidates with a qualification in electronics and at least two years' software development experience to work on complex defence systems. Microprocessor or CORAL experience advantageous. Excellent benefits and relocation offered. Ref 1205/M

Micro S/W Development

Beds £9-16,000
Vacancies exist for graduates with a minimum of two years' Assembler programming experience to join teams developing microprocessor-based P.O.S. systems. Software design experience and knowledge of BASIC or PASCAL would be advantageous. Our client offers first-class career prospects. Ref 1205/N

CONTRACTS

IBM COBOL IMS

ANALYST/PROGRAMMERS SURREY

IBM ASSEMBLER

PROGRAMMERS LONDON

IBM SYSTEM 34 RPG II

ANALYST/PROGRAMMERS LONDON

IBM PL/I IMS

ANALYST/PROGRAMMERS LONDON

DEC RSX MACRO

ANALYST/PROGRAMMERS SURREY

IBM OS/360 CICS

OPERATOR SURREY

Micro S/W Development

Beds £9-16,000

Vacancies exist for graduates with a minimum of two years' Assembler programming experience to join teams developing microprocessor-based P.O.S. systems. Software design experience and knowledge of BASIC or PASCAL would be advantageous. Our client offers first-class career prospects. Ref 1205/N

For further details contact NIC POLAND TLP

A division of Tate & Lyle Industries Ltd.

Leon House, High Street, Croydon CR9 3NH

Telephone 01-686 5656

136851

A member of the Tate & Lyle PLC Group

136851

Real Time Software Engineers

£8K - £12K+ Rural S. England

To maintain their position at the forefront of communication technology our client, an innovative leader in non-military high technology, requires experienced Software Engineers.

This busy team is continuing to grow - to come on board you should ideally:-

- be aged 23 - 30 years
- have an appropriate Degree/HND qualification
- demonstrate programming expertise in Assembler, Fortran, PL/M or Coral
- display an enthusiastic approach to innovation and problem solving.

For a confidential discussion of these career opportunities please call LPS on Newbury (0635) 48709 quoting ref 797/BA or send cv to:

Larkfield Personnel Selection
Mill Reef House,
9-14 Cheap Street,
Newbury, Berkshire,
RG14 5DD.

136861

Holidays come around all too slowly, so when you choose your next break, or look back at your last, you consider all the factors that contribute towards a successful holiday. Much the same approach can be used to choose your next job.

Modern Facilities: Bright, air conditioned offices with Staff Restaurant, Bank, Travel Shop, Newsagent, and Hairdressers, all on the premises.

Picturesque Countryside: The Group Headquarters are in a rural setting with good car and public transport access to the woods, lakes and fields of

Leicestershire, Lincolnshire, Cambridgeshire and Northamptonshire, as well as the Cathedral City of Peterborough.

Good, Inexpensive Accommodation: Both in town and country, Peterborough has been carefully developed to provide pockets of well designed, low cost housing with excellent facilities, and the Thomas Cook location means you don't just have Sundays to visit the delightful villages, you can live in them!

Social Life: A thriving sports and social club provides exceptional facilities, with events all the year round (not just sporting) and includes your own 'pub' in the grounds.

Sporting Variety: Not only can you walk out of the office onto a sports field that caters for soccer, hockey, cricket, tennis, netball and bowls; you will also find that local facilities are unrivaled for sports clubs of all kinds including squash and selling, within ten minutes' drive of the office.

The Right Company: A well established company with a secure future, Thomas Cook (part of the Midland Bank Group) can offer a worldwide reputation and forward thinking management.

But a job isn't just for two weeks, so you will be looking also for a stimulating technical environment (twin IBM 3431's, DEC PDP 11 minis, Apple micro's and private Viewdata) and a company which recognises the importance of what you do.

To maintain and improve their share of the fiercely competitive markets in which they operate (Travel Shops, Tour Operations, Travellers Cheques and Foreign Money), Thomas Cook must continue to develop efficient systems utilising the most up-to-date facilities available, including Telecommunications Networks and Office Automation techniques.

To support the development of these systems they now need further, Programme, Analyst Programmers and Senior Analyst Programmers. A mix of skills is sought including programming in one or more of IBM COBOL, CIS COBOL, BASIC, AIMS, CICS, IDMS. The more senior positions will require experience of analysis and design techniques or team leadership.

However, overall Thomas Cook are looking for a flexible approach to problem solving and an awareness of the business needs of the company and for people with the potential and desire to develop their careers within a challenging and expanding environment.

The remuneration package including salaries of up to £12,500 pa, usual large company benefits and some more unusual ones, will be supplemented by generous relocation assistance where appropriate.

Telephone now, or post the coupon, and by return you will receive details of the jobs, the company, and the area, to help you choose the right move.

Please send an Application Form and Company Profile to:
0472
Position applied for _____
Surname _____ First names _____
Full address _____
Home tel _____ Work tel _____ Ext. _____

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Thomas Cook
THE RIGHT CHOICE FOR THE RIGHT CAREER

PROGRAMMER/ANALYST West London

C. £9,000

The UK subsidiary of a major multi-national capital equipment manufacturer is currently looking for a young programmer/analyst for their West London Headquarters.

Reporting to the Computer Manager you will be responsible for the day-to-day control of the PDP 11/70 - and for ensuring that user problems and queries are sorted out quickly and efficiently. You should be capable of liaising with all levels of management, and be looking to grow into an analytic role. Recent hands-on experience of DEC equipment using DBOL under RSTS/E is essential.

The salary for this position will be around £9,000 but the major benefit will be a high degree of autonomy as well as the opportunity for personal development and self-expression.

Call David Mason Johns today on 01-948 5922 (24 hour answering service) or 01-747 0968 (evenings and weekends) for an application form, alternatively write to him at the address below.

Please quote Ref. 8363/CW.

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01-948 5922
KPG Computer Support Services Limited
Cobden House, Park Lane,
Richmond, Surrey, TW9 2RA

CONTRACTS

Programmer/Analysts ICL 2900 VME/B

System Analysts IDMS COBOL

We have a number of vacancies in this area all at different levels for six month contracts.

Systems Programmers IBM MVS/SP ASSEMBLER

Senior Programmers BURROUGHS 6700, 6800

Analyst Programmers DMS2 COBOL, GEMCO

Five years' Burroughs experience essential for six month contracts.

Programmers IBM DOS/VSE

COBOL EASYTRIEVE

Force Eight Computer Services

8 Mint Walk, Croydon, Surrey, CR0 1EA.

136861

SYSTEMS & PROGRAMMING

PROGRAMMERS IBM PL/1

Major expansion within this progressive company has led to vacancies for all levels of programmers. Opportunities exist within the systems development teams for applicants with a minimum of 18 months PL/1 experience. The client is situated in Central London and retains large IBM mainframes running under MVS and VM/VSE using PL/1 Assembler, CICS and IMS.

- ★ New development projects
- ★ Emphasis on TRAINING and career development
- ★ Training in CICS and IMS

PROGRAMMER IBM COBOL

This expanding bureau based in Central London seeks to recruit a programmer to become part of a highly successful team. Potential applicants require two years COBOL, some of which should have been gained on IBM hardware. Any TP or DATABASE experience would be an advantage, but FULL TRAINING is offered where necessary. Candidates will be involved in much client contact thus mobility and appearance are important.

- ★ Rewarding career
- ★ Variety of projects
- ★ Training in CICS and DATABASE

PROGRAMMERS ICL COBOL

Are you looking for a challenging position that can offer you real career prospects? This well known company seeks experienced programmers to expand all of their major commercial systems. The client retains ICL 2950s and will shortly be running under VME, using TPMS and IDMS. Ideal applicants should have a minimum of 18 months ICL COBOL, together with an enthusiastic attitude.

- ★ Expanding into
- ★ Good working conditions in a friendly atmosphere

PROGRAMMERS £10,500

£10,500

to £12,000

PROGRAMMER ANY COBOL

This new installation retains HP 3000 machines and offers an excellent opportunity for a programmer to broaden and consolidate his/her experience. Applicants must have a minimum of two years COBOL gained on any hardware, preferably in an on-line environment. The successful candidate will be offered training on HP3000, and IMAGE database. This is an interesting position offering new projects, variety and client contact.

- ★ Excellent training
- ★ Career prospects

PROGRAMMER IBM COBOL

This prestigious firm of merchant bankers in the city can offer an exciting career move for a programmer with a minimum of 12 months IBM COBOL CICS and DL/1 experience. You should be a graduate in your 20s, ambitious and looking to progress into analysis. In return you will be offered varied financial development projects and excellent company benefits, including subsidised mortgage.

- ★ Relocation package if required
- ★ Overseas travel
- ★ Subsidised Mortgage, Pension and Life Assurance Schemes

ANALYST IBM

Our client, an international insurance company with impressive offices in the city seek to recruit a high calibre DP professional, with at least two years IBM systems analysis experience. Successful candidates will work on major projects from feasibility to implementation. The company retains IBM 4331 hardware, running under DOS/VSE using COBOL CICS and DL/1.

- ★ Subsidised mortgage
- ★ Prestigious, progressive organisation
- ★ Career prospects towards management

£14,000 NEG.

OPERATORS

PDP RSX/11M OPERATORS

c. £7,800

This rapidly expanding highly successful manufacturing company seek to recruit enthusiastic self motivated RSX/11M operators with the ability to take on greater responsibility. Excellent opportunity for career development. Benefits include free life assurance, BUPA, Luncheon Vouchers, and general discounts on all company products.

PDP RSTS/E OPERATOR

£7,000

Due to promotion an exciting opportunity currently exists within this leading international organisation. They are seeking to recruit an ambitious and enthusiastic operations professional with a minimum of twelve months RSTS/E experience, with the ability to maintain a large on-line system. The company has a policy of providing a continuous programme of career development with regular training courses arranged.

IBM DOS/VSE OPERATORS

c. £7,500

We have urgent requirements for a selection of operators for some of the fastest growing computer companies in London and the Home Counties. If you have six months plus DOS/VSE experience, are ambitious and wish to expand your computer knowledge, call us now for further details.

IBM OS/VS1 SEN. OPERATOR

£8,200 +

Sub. mortgage, free life assurance, and BUPA cover are just part of the package offered by this well established financial organisation. Candidates should have a minimum of three years experience, preferably with some VM. Must possess leadership qualities and have the ability to take on greater responsibilities as there are rapid promotional prospects.

2429796

computer recruitment limited 15 Red Lion Square London WC1R 4QH. Telephone: 01-242 9796

Our Advanced Technology - Your Career Opportunity

PROGRAMMER/ANALYST

DEESIDE

We are a recently-formed organisation (an Anglo-American partnership), manufacturing and developing optical waveguides to telecommunications standards. Our computer section is already expanding and we are now looking for a sound and enthusiastic man or woman to join us.

You would form an interface with the process control section and would be involved in the maintenance and development of production systems - including tracking and reporting, material planning, downtime scheduling and reporting - together with appropriate documentation update.

You must be a graduate in a science discipline who has at least three years' experience of FORTRAN on VAX under VMS (DEC PDP under RSX could be acceptable). You should have a versatile approach and must have the ability to communicate fluently at all levels.

We offer a starting salary of £8,220 and our benefits package - which reflects our progressive company policy, includes 21 days holiday, private medical insurance and assistance with relocation expenses in appropriate cases.

If you want to develop your career in a stimulating environment and in the forefront of technology then write with comprehensive career and personal details to:

Chris Ainsworth,
Project Personnel Officer, Optical Fibres,
Deeside Industrial Park,
Deeside, Flintshire CH5 2XK.



Specialist in Process Automation

around £25,000 net of tax[†]

BAHRAIN

The Smelter Reduction Department operates 608 electrolytic cells all of which are controlled by Modcomp IV computers.

The successful candidate will help ensure reliable operation of the present control system, plus implement improvements, by designing and writing software (Fortran/Assembler) based on established user requirements. He will also work with hardware maintenance groups to ensure high levels of reliability.

Extensive experience in on-line control systems is a requirement of the job. In addition, previous experience with Modcomp computers would be a distinct advantage, ideally in an Aluminium Smelter or similar industry.

Earnings, at present tax free and freely transferable, will be around £25,000 (calculated at current exchange rates) including allowances and end of contract bonuses. The position is offered on a 3 year extendable contract basis - married or single status.

In addition, substantial benefits include: * 22 working days' annual leave, plus 12 days' public holidays * rent free furnished air-conditioned bungalow * full recruitment and repatriation expenses * annual return air fares for employee and family * free education for children * free medical care.

Bahrain is a stable country with a liberal government. English is widely spoken and the Company is experienced in the rapid and smooth entry of expatriate staff into the local community. Extensive sports and social facilities exist.

Please write with full details to: Mr. K. W. Rowe,
Alba Smelter Services Limited, Stanbrook House,
23 Old Bond Street, London W1X 3TB.

ACCELERATE INTO MINICOMPUTER SALES



If you are young, enthusiastic and would like to move into minicomputer sales, we would like to hear from you.

D.R.G. Business Machines, part of the £600 million turnover Dickinson Robinson Group, are one of the fastest growing companies in the minicomputer market, with a projected increase in turnover of 50% during 1983.

We require people who will work hard and would benefit from COMPREHENSIVE TRAINING in this fast expanding marketplace.

Typically these opportunities will appeal to MICRO COMPUTER SALES PEOPLE and BUSINESS GRADUATES keen to establish a career with a market leader.

If you are self motivating, wish to put your career in TOP GEAR and have the potential to earn in excess of £20,000 per annum, please contact:

Mr C. Alton on 01-961 6955 (London and South East)
Mr T. Flynn on 0934 415398 (Bristol and South West)

or write enclosing a C.V. to

Mr C. Alton
D.R.G. Business Machines
Black Arrow House
2 Chandos Road
LONDON NW10 6UP



An open invitation to IBM Systems Programmers

Find out about the attractive career opportunities at our Computer Centre in Hammondsorth, Middlesex. Meet some of the computing team over a drink at: The Royal Lancaster Hotel, Bayswater Road, London W2. (Near Lancaster Gate Underground Station) Wednesday May 18, between 5.30pm and 8.30pm.

The Sheraton Skyline Hotel, Colnbrook By-Pass, Longford, West Drayton, Middlesex (Close to London Heathrow Airport). Thursday May 19, between 6pm and 8.30pm.

British Telecom is expanding

its computer operations and needs more experienced IBM Systems Programmers to work on a wide range of hardware and software. You will be located initially at Hammondsorth where installations include IBM 3081, 3033, 370/168, 4331 machines.

You must be educated to A'level standard and have at least 18 months experience with one of the following MVS with Assembler, CICS, IMS, Data Communications software (TCAM, ACI/VDAM), VM/CMS, DOS/VSE, TSO/SPF, JES2.

Starting salary (including Outer London allowance) will be up to £10,300, depending on age and experience. All salaries currently under review. You'll enjoy a 5-day week, flexible working hours and all the benefits of working for a large progressive organisation that offers a sound career structure as well as scope for broadening your expertise. If you're able to come along to one of these open evenings, a telephone call to Michelle Priestley on FREEPHONE 2593 would be appreciated. If you can't make it, she will be pleased to send you further details and an application form.

British Telecom Data Processing Executive

COMPUTER SYSTEMS MANAGER

Required by
THE CORPORATION OF TRINITY HOUSE

To co-ordinate and supervise the introduction of a computerised office automation system throughout the Lighthouses Service organisation.

Salary between £5,642 per annum annum and £10,978 per annum including London Weighting. Applicants should have a proven record together with experience of Hewlett Packard equipment. Knowledge of Data, Control and Pascal essential. The successful applicant will be based in London and will be required to travel throughout the UK and throughout Europe. Details and application forms from the Staffing Officer, The Establishment Office, Trinity House, Lighthouses Service, Tower Hill, London EC3N 4DH or telephone 01-800 6601 Ext. 268. (2582)

Lecturer II/Senior Lecturer in Computing

The POLYTECHNIC
WOLVERHAMPTON

CONTRACTS

Banking exp. 88. Six month duration. £A.T.E. £Good rates. £Neg. £June 83. £July 83. £June 83.

PERMANENTS

10t Vacancies - Defence systems, degree req., Gac., POP, Vse boxes, RSX-11M, with 1 or more of the following Coral 88, Algol, Pascal, Fortran, MPS-10, Macro-11, Assembler/PLI, Anal/Prog - Banking, some travel, IBM system 34, RPG2, Anal/Prog - European bank, assembler PDP, AIMS, ARBAT, Prop/Designer - Real time solitario systems, simulation work, POP, RSX-11M, MACRO-11, TEAM LEADER - Software house, developing graphic packages, Fortran prof. EAAE. Other permanent/contract vacancies on file.

Interested? Then telephone Clive Chatton now or write to him at:

4 LONDON WALL BUILDINGS, BLOOMFIELD STREET, LONDON EC2M 5NT.
01-588 8161

Systems Engineer

— Packet-Switching Networks —

c. £13,250 p.a. International Travel

Northern Telecom is one of the World's largest and most successful suppliers of telecommunications systems with their European and Middle East operations based in Maldenhead, Berkshire.

Following the outstanding success of our X25-based networks throughout Europe, we urgently require a network systems engineer to provide a total pre and post-sales support service to our customers on multi-million contracts.

Your background, whilst showing an appreciation of system hardware should be predominantly in the field of communications software. Ideally you are currently employed in the support or development of packet-switching networks and have worked with IBM protocols (2780, 3780) or interfacing small business systems with Viewdata or Telex.

The role is stimulating and highly active, working with the frontiers of communications technology and allowing you to see projects from specification to final installation and beyond. Career prospects both in the UK and internationally are excellent.

For further details please telephone our Consultant Ken Allwright on Maldenhead (0628) 74274 or write to him at Charlil Lewis International, 27 Marlow Road, Maldenhead, Berks.

Charil Lewis
INTERNATIONAL

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telecom

(2582)

THE UNIVERSITY OF SHEFFIELD

DEPARTMENT OF COMPUTER SCIENCE

Senior Experimental Officer

Applications are invited from men and women for a post to play a leading role in the development of a statutory function in the University of Sheffield. The post involves the design, implementation and logical design of hardware and software systems for the experimental assessment of data and information systems. The post involves the design and implementation of data and information systems, the design and implementation of logic and computer systems, and the design and implementation of logic and computer systems.

The post is for 12 months, with a possibility of extension.

For further details please contact Dr. G. J. D. Smith, Department of Computer Science, University of Sheffield, Mappin Street, Sheffield S1 4ED, Tel: 01-21 454 3224, Ext. 2211.

Applications should be sent to Dr. G. J. D. Smith, Department of Computer Science, University of Sheffield, Mappin Street, Sheffield S1 4ED, Tel: 01-21 454 3224, Ext. 2211.

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Peterborough Information Technology Centre

PITEC is one of the new nationwide network Information Technology Centres funded by the MSC and Department of Industry, and supported by the Peterborough Development Corporation and the Cambridgeshire County Council and local industry. It is part of the Peterborough Youth Opportunities Council.

PITEC will train school-leavers in business, office, software and hardware computing, as well as providing business starter units and facilities for special interest groups, seminars and courses.

We require two managers and three supervisors:-

Training Manager

To develop and run the training programmes of the Centre. Previous training experience in the computer field is essential.

Business Liaison Manager

To create a bridge between PITEC and local businesses for the placing and control of trainees in jobs and work experience, as well as obtaining projects for the Centre. A communicator with knowledge of smaller businesses is required.

Electronic Office Unit Supervisor

To set up and run the office training side of PITEC Ltd, which covers wordprocessing, small business software packages, office skills and PITEC's own office work. Good typing and experience of electronic office equipment is needed.

Software Unit Supervisor

To set up and run a computer room to provide training in computer operation and programming using a ring based on BBC machines. Knowledge of micro-computer use and programming is essential.

Hardware Unit Supervisor

To set up and run a micro-computer workshop for training and development. A knowledge of computer electronics and design is essential.

Salaries and conditions of employment are attractive. Further details and full job descriptions from:-

PITEC

The General Manager
PITEC Ltd c/o Peterborough Development Corporation
Touhill Close, Peterborough

THE LAW SOCIETY DATA PROCESSING MANAGER £11,602-£17,412

The Law Society is the professional association of the solicitors' profession and, at present, employs a computer bureau for record keeping and related systems. A Data Processing Manager is now required to oversee the extension and development of the systems initially by way of bureau operation but transferring to an "in house" operation within two years. He/she will also be responsible for advising and supervising the development of all aspects of data processing, including word-processing, within the Society's sphere of operation.

Ideally the successful applicant will have experience in the implementation of computer projects, overall management of a small installation and will have a knowledge of data base design. He/she will be required to work closely with the bureau in setting up the data base on the bureau mainframes, and with departments of the Society in determining their needs and recommending how they should be met.

He/she will be involved in the acquisition of hardware and planning in respect of staffing and accommodation, and will subsequently be closely concerned in the arrangements leading to the acquisition of an "in house" mini computer for which he/she will assume full responsibility including the further development of the system.

Conditions of service are attractive and include 20 working days leave increasing with service to 26 days, annual salary reviews and a contributory superannuation scheme with free life assurance cover.

Depending on age and experience, an appointment will be made within the above salary range, not necessarily at the minimum.

Applications, with precise details including dates covering education, qualifications, career and salary levels, should be addressed to the Personnel Manager, The Law Society's Hall, 118 Chancery Lane, London WC2A 1PL, to arrive not later than 27th May, 1983.

(358)

Freelancers . . .

... in the North of England and Scotland who are available now or in the near future are invited to contact me, Peter Moore, to discuss a variety of interesting contract assignments. Our current requirements include analysts/programmers with:

- PL/I
- MARK IV
- UNIVAC 1100



P-E Computer Services Limited
Winchester House, Fountain Street, Manchester M4 2EF. Tel: 061-288 2776

(358)

Project Leader

Berkshire to £14,000

Our Client A well established, profitable manufacturing Company supplying high-technology, engineered products to the petrochemical and associated industries. Turnover £30m. Eight overseas trading and manufacturing facilities. Aggressive growth plans.

A major investor in high technology, including CAD.

DP Dept Consistent profitability and growth has been achieved by the implementation of advanced operational and management information systems. Extensive real time network supporting database systems. IBM mainframe in the Company headquarters at Slough. Current activities include the development of standard software for installation in all subsidiary companies.

The Vacancy An outstanding opportunity for an experienced DP professional to join the existing team. He/she will lead a team of Analysts and Programmers in the investigation, design and implementation of a variety of advanced information systems.

Applicants must demonstrate proven experience in the field of project control, working to formal standards and time-scales.

Reporting to the Systems Manager, the successful applicant will be responsible for all aspects of team performance, development, motivation and control.

Starting salary of up to £14,000. Performance review after six months plus promotion to Project Manager.

Five weeks' holiday.

Relocation scheme where applicable.

Other fringe Company benefits.

Please send full career details to the Confidential Reply Service, Ref: AEP 416, Austin Knight Limited, 68a High Street, Egham, Surrey, TW20 9EY.

Applications are forwarded to the client concerned, therefore companies in which you are not interested should be listed in a covering letter.

The Package

To Apply

ONCE IN A WHILE SOMETHING EXTRAORDINARY HAPPENS

Extraordinary because Apollo Computer has achieved remarkable worldwide growth. Compared with the performance of other manufacturers Apollo has leapt ahead and a glance at the chart below will indicate a significant trend in sales and shipments driven by a market hungry for the right solution.

DOMAIN's computing power and peripheral resources are expandable in stages that are far more affordable than upgrading a conventional mainframe. Programs and data may be shared quickly and easily across the network. The network's fault-tolerant architecture provides high overall system availability.

Each DOMAIN Node provides a virtual memory operating system, an extensive command library, and high-level language compilers. DOMAIN Nodes co-operate under a single, network-wide directory for easy access to programs, data and peripherals.

That market is for effective and economical workstations in scientific, engineering and computer science environments. The right solution is a price/performance ratio that brings "mainframe" power to the desks of technical professionals.

Two years ago Apollo pioneered the concept of DOMAIN processing utilising 32 bit, VLSI, high performance, virtual memory "computational nodes" each dedicated to

apollo computer (uk) Ltd.

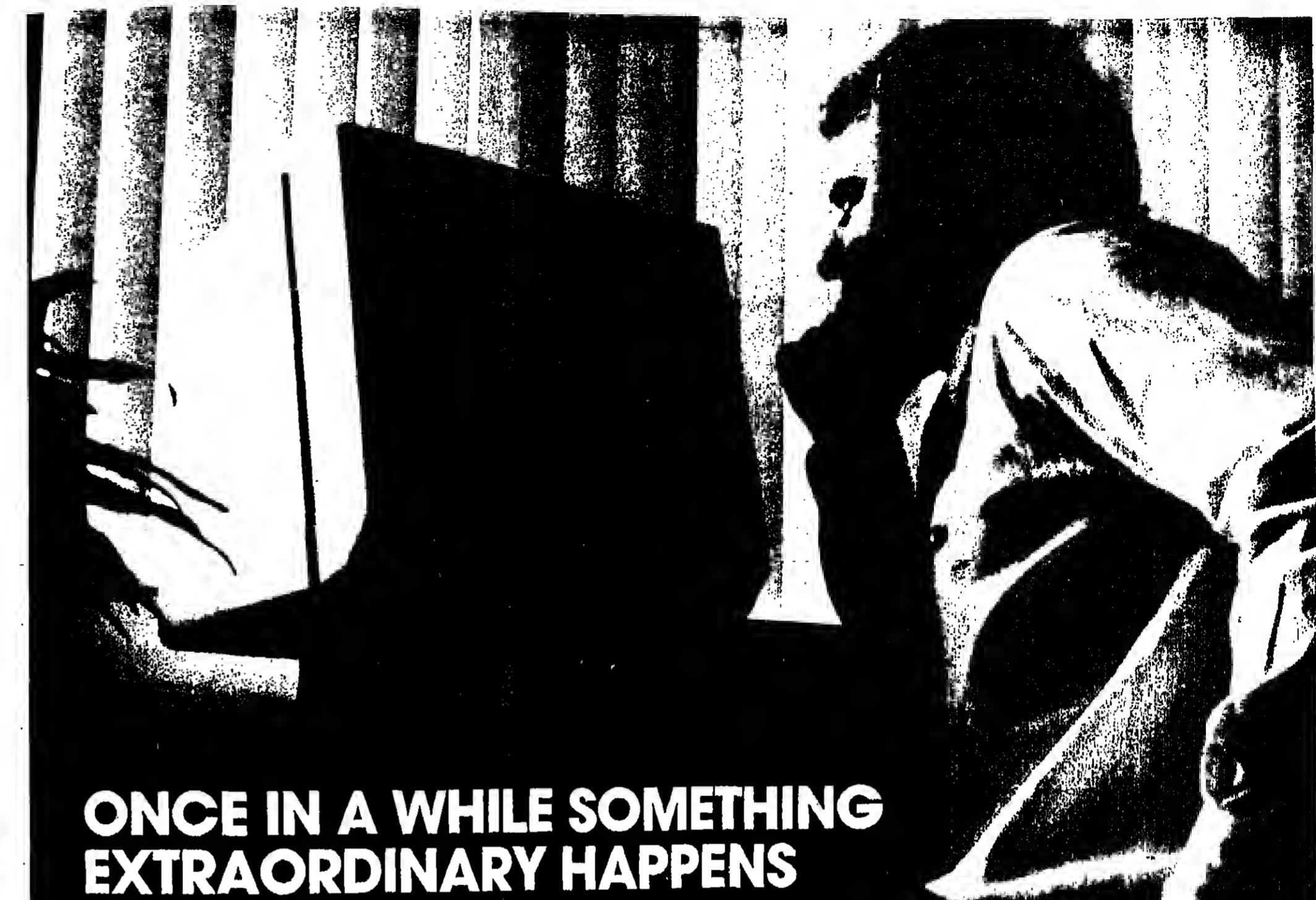
Technical Support To £16,000

For our ever growing installed base we are seeking support staff to combine their software and hardware experience in both the pre- and post-sales environment. Applicants should have broad systems experience in a technical computing environment utilising VM and graphics software preferably with a supermini manufacturer. We are also interested in hardware engineers with allied experience of software and the potential to rapidly develop in this area. The competitive package includes a salary up to £16k, choice of car, exceptional benefits and product training in America.

Technical Sales To £27,500

To meet the demand for DOMAIN systems we are seeking successful sales people with a minimum of three years experience with a supermini or turnkey manufacturer or bureau. The package is competitive and realistically geared to provide accelerated earnings. Initially there will be a negotiable guarantee and thereafter OTE of £27,500 are very achievable, with no ceiling on total earnings. A choice of car will be provided along with the exceptional benefits including product training in America.

For an early discussion ring our Consultant, Jeff Bowman or send your C.V. To obtain an application form simply clip and send the coupon below.



M&A

Computer Operator

Starting Salary c.£8,500

The Development Corporation has the exciting and major task of the regeneration of the Docklands.

This requires considerable effort and expertise in providing the appropriate support services for information, planning and control. In order to achieve this the Corporation has developed automated office systems based on Prime 750 and 550 mini-computers and is currently involved in the further development of the system.

We need to appoint a Computer Operator who will be responsible for the effective operation and maintenance of the computers and associated terminals. The person we are looking for, whilst

preferably having experience of Prime equipment, will have been involved in the operation of various mini-computer systems on computer-dependent sites. It is likely that the candidate will be in the age range 25-35 and educated to "A" Level standard followed by a computer studies programme.

Please write in the first instance to me for an application form, David Lowman, Personnel Manager, London Docklands Development Corporation, West India House, Millwall Dock, London, E14 9DT.

We wish to move quickly on this appointment and we intend to review completed applications not later than June 3 1983.

►►►CONCEPTS INTO ACTION►►►



An equal opportunity employer

(3824)

Programmers & Programmer Analysts

The United Nations Development Programme administers one of the world's largest multilateral funds for technical assistance to developing countries. Challenging opportunities exist for qualified programmers and programmer/analysts in the Division of Manpower and Employment Services to participate in the development of information systems. In a wide range of application areas, a number of assignments of varying duration are currently available at the New York headquarters of UNDP.

Individuals selected for this programme must have the ability to work well within teams developing complex on-line systems. Languages presently used are COBOL/CICS, MARK IV, PL/I and INQUIRE. A minimum of 5 years programming experience in one or more of the above languages as well as a university degree are required.

These positions offer an excellent compensation package. Visa and relocation assistance will be offered where applicable. Only qualified applicants will be reviewed. For consideration, please submit a detailed resume to:

Director of Personnel
UNITED NATIONS DEVELOPMENT PROGRAMME
One United Nations Plaza
Room OC-1818, Dept. CW
New York, NY 10017 USA

UNITED NATIONS
DEVELOPMENT
PROGRAMME

Real-time scientific programming for projects so advanced, even this ad will be history by the time you've read it.

So please phone for an update.

We would have liked to have told you here how international contracts and project expansion have created a range of new opportunities for Programmers and Senior Programmers in the field of aircraft and visual simulation.

We would have also liked to have described how this team is making routine use of the latest 32-bit mini's and microprocessors in multi-configuration - and how they apply real-time software in the simulation of complex electronic systems and computer generated imagery.

But we just can't do it. Because the technology employed at Link-Miles is moving so fast.

So instead, take our update in real-time. If you're a graduate with a minimum of two years' real-time scientific programming experience, and you're ambitious personally, technically and financially and would like to live on the South Coast, please phone Helga Clawson today on Lancing (0903) 755881 or alternatively write to her at the address below.

But be warned: once she's told you what our Programmers are achieving here, you will never be satisfied with anything else.

Link-Miles

A division of The TANGENT Company (UK) Limited

Link-Miles Division
Chichester Industrial Estate
Lancing, Sussex BN1 5AU

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IBM

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IBM 4341 OS/MVS PL/I JSP PROGRAMMERS

ICL

USER END ANALYST (IPSWICH)

ICL ME 29 TME RANGE COBOL PROGRAMMERS

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HP 3000 COBOL SYSTEMS ANALYSTS

PDP 11 AIMS/ABS PROGRAMMERS

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16/32 BIT MINI PASCAL OR SIMILAR LANGUAGE PROGRAMMERS

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ZILOG80 AND MOTOROLA 68000 ASSEMBLER DESIGNER/PROGRAMMERS

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SYTEL EXPERIENCED PROGRAMMERS

KUWAIT

ICL 2900 IDMS/TPMS VME/B COBOL ANALYST/PROGRAMMERS

ICL 2900/ME/B COBOL KNOWLEDGE OF IDMS ANALYST/PROGRAMMERS

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SYSTEMS ANALYST/PLANNED MAINTENANCE

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FOR KUWAIT REQ PLEASE CONTACT

STEVE LOVELACE ON (0442) 40761

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Computer Search Contracts
(3847)

Recruitment Consultancy

A Sales Consultant with the Market Leader
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SCR is the leading Company in the UK and Europe, providing a complete recruitment service to the Computer Industry. Working closely with the major users, manufacturers and software houses, SCR provides a consultancy service across the whole spectrum of job responsibilities.

Due to continued expansion we now wish to appoint individuals with the necessary qualities to be successful recruiters within a sales driven environment.

The role of a Recruitment Consultant has become one of the purest forms of selling; it is both challenging and demanding, requiring a high work rate, the ability to

communicate lucidly, and excellent organisational skills. You will need a positive approach to managing a sales territory, and confidence in your own ability to sell in a range of competitive situations. You should have a sales, marketing or technical background in computing, or considerable recruitment experience which should include senior or executive level appointments. You will need to be self-motivated, assertive, and determined to succeed. We offer substantial benefits, training and support to equip you fully for this fast-moving and challenging environment.

For further information, contact in total confidence:

(LONDON) Andrew Carter on 01-935 0671

(24 hour answering service) or
01 486 0877 (Evenings)

(BIRMINGHAM) David Wade on 021-236 3781

(24 hour answering service) or
0785 660051 (Evenings & Weekends)

(MANCHESTER) Sheila Bradbury on 061-833 0427

(24 hour answering service) or
0625 523823 (Evenings & Weekends)

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021-236 3781

NORTH
International House, 84 Deansgate,
Manchester M3 2ER
061-833 0427

BELGIUM
Avenue Louise 327,
1040 Brussels
010 322-840 7161/71

HOLLAND
Willemsparkweg 92,
1071 H.M. Amsterdam
010 312-78047

UK AND OVERSEAS CONTRACTS

ANALYSTS PROGRAMMERS PROGRAMMER/ANALYSTS

Opportunities are available for a number of contract and permanent candidates with the Tangent Systems and Software Group. Our support services are in demand by many client companies around the world. Amongst our current requirements are the following:

ADABAS, NATURAL, OS, MVS
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We will offer excellent rates of pay for either contract or permanent employment to candidates for these requirements.

Please contact: TANGENT COMPUTER SERVICES LTD.
102/106 South Street
Romford
Essex RM1 1RX
Tel: Romford (0708) 750201

tangent
SUCCESS IN THE SOFTWARE WORLD

QUEEN MARY COLLEGE
University of London

PERO
COORDINATOR

The Computer Centre is responsible for the support of ID, PRO Workstations for the provision of computer services to the University. As a basis for all PRO support activities a COORDINATOR is required for two years in the first instance. Duties will include system administration, software support, and distribution, system support, documentation, a newsletter and liaison with other offices and interested parties. The successful applicant will be a graduate, or equivalent, with a minimum of 2 years experience in a computing environment, with particular reference to small systems, application packages of ID/PRO, and an ability to demonstrate system support, software support and communication skills.

Initial salary at stage 1 under review £23,200-£26,000 p.a. Applications, enclosing full details, should be made by return to the Director of Finance, Personnel Section, Queen Mary College, Mile End Road, London E1 4HS, by May 31, 1983.

For discuss this position informally please 'phone Phil Collins (Development Manager) on 01-874 8464, ext. 210 or, if you prefer, apply for an application form to the Director of Finance, Town Hall, London SW18 2PU. Tel: 01-874 8464, ext. 350/372. Close 20 May.

(3801)

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Box number replies should be addressed to:

Box Number
c/o Computer Weekly
Quay House
The Quay
Bulwer, Surrey GU2 8AS

Wandsworth
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(3812)

Freelance Database Administrator IBM-IDMS

An opportunity to work for one of our established clients as a member of a database team.

The team supports a large number of projects developed using COBOL, CICS and DOS/VSE.

Please Phone: Sheila Fox
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logistix Logistix Recruitment Limited
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Telephone 01-373 3063

Scientific Progs/Designers

E.E.C.: Pkg to £16K

A leading international Systems House and Consultancy currently requires additional Scientific Programmers and Software Designers for permanent career positions in Holland and Germany. Suitable applicants will be graduates with between two and six years' industrial experience in a realistic mini-computer or microprocessor environment. Your programming skills should include Pascal, at least one high-level language preferably FORTRAN, CORAL, 68000 or PASCAL and, additionally, an Assembler. Particular hardware experience is not important, but knowledge of DEC 11-VAX, CTI mini or Motorola 68000 would be a distinct advantage. For the Software Design positions, applicants will be expected to offer knowledge of Data Communications, Networking Systems (LANs) or Process Control. Ref: L/18/4

C & UNIX Programmers

London: Salaries to £10K

A highly regarded Product Supplier is currently seeking to recruit several Systems and Applications Programmers to work on its UNIX-based range of products. Applicants, aged 22-26 years, should have graduated since 1980 with a good class honours degree in a suitable subject and have at least one year's commercial or industrial experience. Very recent M.Sc. or Ph.D. candidates are also encouraged to apply, particularly if their

chosen subject matter was directly concerned with UNIX system software. It is advantageous to be fluent in C programming language and also offer PASCAL as a secondary language. Whilst the majority of programming work is undertaken in-house, candidates will be expected to work on clients' sites both before and during the implementation phase. Ref: L/18/8

Systems Designers Project Ldrs./Programmers

Southern Home Counties: Salaries to £15K

Our Client is a Systems and Software House with a well-deserved reputation for solving of newly-win contracts has given rise to a number of vacancies for Systems Professionals able to deliver elegant and efficient solutions to extremely challenging problems.

For all applicants a good Honours Degree in Computer Science or a related discipline, supplemented by at least two years' experience in an industrial real-time environment is an essential requirement. Such experience will preferably include participation in the design and implementation of complex technical or systems software. Specific language skills should include fluency in FORTRAN and PASCAL, C or AI-GOL, supported by substantial Assembler usage. Candidates for the more senior positions must be able to show that they have the ability to lead a small team of Programmers and Designers through the phases of a project from original Outline Specification to implementation and customer acceptance.

Current applications areas include communications networks, interactive terminal systems, graphics and on-line reservation systems. Experience in any of these fields will, therefore, be welcomed and will attract a salary premium.

Individuals who feel they meet the stringent requirements outlined above should either forward a well-documented résumé to our offices or telephone one of our Consultants quoting Ref: L/18/1.

Operational Analysts

London: Salary to £13.5K

A number of Operational Analysts are required by this London based Consultancy. Academically, you should hold at least a first or second class B.Sc. Degree in Mathematics, Physics or Statistics, an M.Sc. or Ph.D. in Operational Research is a distinct advantage and will certainly reflect in the salary offered. Past work experience should include one or more of the following areas: war gaming and

Ref: L/18/C

Software Development

Berkshire: Salaries to £14K

An international manufacturer and supplier of hardware and turnkey systems has budgeted to augment significantly its professional and technical personnel during 1983. Consequently, a number of outstanding opportunities exist for Software Development Engineers and Systems Implementation Engineers. Your academic and work experience must include a good class B.Sc. degree and at least 18 months' software engineering experience where office automation is concerned. Ref: L/18/2

Expert Systems

Thames Valley: Salaries to £14K

Our Client's Research Centre, established in 1978, has recently taken additional premises in the Reading area. An immediate requirement exists for people to participate in the development of the company's range of products and services. You are probably employed as a Systems Programmer, Design or Consultant and have a minimum B.Sc. degree in a suitable subject. Thus you should

have a good academic background and some relevant industrial or commercial experience. The Company's specialist areas of activity demand that all potential employees have an in-depth knowledge of two or more of artificial intelligence, cybernetics, knowledge engineering, robotics, process and control engineering. Ref: L/18/3

TELECOMMUNICATIONS SPECIALISTS

19th MAY

This recruitment feature with full editorial support, will highlight job opportunities in the growing telecommunications field.

For further information please ring:

01-661 8080 (direct clients)

01-666 8787 (consultancies)

UNIVERSITY COLLEGE OF SWANSEA

Microprocessor Centre Manager Applications are invited for the post of Manager for the Swansea Microprocessor Centre. The Centre is established in the University College of Swansea and provides a service to the College, Applications should be submitted, or equivalent qualification, together with appropriate experience with microprocessors and their applications. Responsibilities of the post include the day-to-day running of the Centre, liaison with users and the continuing development of the Centre. The post is suitable for a person with demonstrable technical competence who is seeking to expand and apply their skills. The salary range is the scale £10,670-12,695 per annum together with LIS/USPS benefits.

Application forms (three copies and postage paid) may be obtained from the Personnel Office, University College of Swansea, Singleton Park, Swansea SA2 8PP, to which completed forms should be returned by Friday, June 17, 1983. Ref: CW69/4

Senior Computing Professionals

The Information and Business Systems function of IBM United Kingdom Limited - based in Portsmouth - provides a wide range of application systems and end user services within the company. We are currently working on both distributed and host machine based systems using the latest techniques to meet the business needs of the application systems field.

We are now looking for a small group of men and women with proven leadership skills and a background in one of the following disciplines:

Senior Analyst/Programmers

You should have a minimum of 4 years' experience in JES2, MVS, IMS and DB/DC and should be used to working under IPT. Alternatively, you could have experience of a VM/CMS distributed environment.

Senior Analysts

You should also have had some data analysis and IMS DB design experience, working on all project phases from gathering user requirements and systems designs through to implementation of both batch and on-line systems.

Senior Programmers

You must be skilled in PL/I, IMS, VSAM, and TSO/SPF and some experience of ADF/BTS/DB prototype would be desirable.

THE SUFFOLK COLLEGE OF HIGHER & FURTHER EDUCATION

Department of Business and Management Studies

PART-TIME LECTURERS

are required for a variety of courses in Data Processing, Programming, Computer Studies, and courses for teachers, both during the day and the evening.

Application forms available from:

The Assistant Principal,
Suffolk College of Higher & Further Education, Rope Walk, Ipswich, IP4 1LT.
Please enclose S.A.E.
Ref: CW69/5

QUEEN ELIZABETH COLLEGE Kensington (University of London)

COMPUTER ASSISTED LEARNING OFFICER

(Further advertisement)

Required as soon as possible. Responsibilities include supervision of Physics/Computer Science in CAL Laboratory, adaptation of CAL packages, and development of new packages. Equipment includes 3802s, PETs, Apples and DEC VAX/Gigl terminals. Applicants should be graduates with relevant CAL experience. Appointment is to September 1984 in first instance. Starting salary in range £5,601-£6,800 (rising to £8,065) p.a. plus London Allowance £1,158 p.a. Further particulars from College Secretary, Queen Elizabeth College, Campden Hill Road, Kensington, London W8 7AH. Closing date May 23, 1983. Ref: CW69/6

BOX NUMBERS

Box number replies should be addressed to:

Computer Weekly
Grosvenor House, 25 Grosvenor
Road, London SW1W 4AS
Ref: CW69/7



IBM CONTRACTS

PROGRAMMERS - LIVERPOOL

Thorough PL/I background MFT or MVS environment. Contract: COSOL TOTAL added bonus - 6 month contract. Immediate start.

Contact: MIKE MANNION

MVS JCL - VARIOUS

Many long term contracts for MVS JCL Writers.

Immediate start

Contact: MIKE PALMAN

Ref: CW69/8

KPG
KPG Computer Support Services Ltd.
Coltishall House, Park Lane, Higham, Surrey TW5 2AA
Ref: CW69/9

CHIEF OPERATOR

CIRCA £8,000

For a mixed installation ICL ME29 CTL 8000 CROMEMCO System 3 ME29 and GEORGE 2 experience essential. Knowledge of Minis and Micros an advantage.

Candidates should have had 4 years' experience, including a senior position within a ME28 installation.

Send full details or apply for an application form to: Mrs J. D. Fair, Personnel Officer, Haden Pte, 7-12 Tavistock Square, London WC1R 8EJ. Ref: CW69/10

MODUS

Modus Management Services Limited
19 West Street, Dunstable, Beds. LU6 1SL
Telephone: Dunstable (0582) 608002
Evenings/Weekends: (0908) 670094

MICRO PROFESSIONALS TODAY

is the first day of the rest of your career -
Don't Waste It!

Modus has a long standing association with companies who are developing 'state of the art' micro technology. Accordingly we have many requirements for skilled micro professionals. Displayed below are but a few of our clients' current requirements. So if you are looking for an exciting and challenging position in the broad spectrum of 'The Micro World' it is worth giving us a call.

Software/Hardware Development

Berkshire £12,000 to £14,000 + car

A senior role within the Support group, providing both pre and post sales support in a Z80, 8088, CP/M, LAN environment. Candidates must have a good knowledge of Assembler and Operating Systems software. Preference will be given to those with good CP/M experience. A dynamic, hardworking and ambitious attitude is essential.

CW69/4

European Support

Middlesex £ as high as necessary + car

Previous sales support and in-depth CP/M experience are absolutely mandatory. Previous European experience and the ability to speak French would be advantageous. Initially, this position will involve setting up support groups, training European distributors and Pre/Post Sales Support. So candidates must be capable of coming on-line very quickly.

CW69/5

Software Engineers

Milton Keynes, Bucks. £11,000

This young and ambitious company is involved in the development of micro based (Z80) business computer systems, particularly portable data capture equipment. To support major expansion they require software engineers, preferably under the age of 30, with a degree or equivalent, plus at least 2 years computer experience.

CW69/6

Expertise in Assembler and a high level language plus experience of communications protocols on micro-based systems is all you need to join this youthful team developing award winning products.

CW69/7

Software Engineers

Gwent £ High

A world leader in - COMMUNICATIONS - currently in a growth situation is offering major opportunities to ambitious dedicated Engineers. This leading independent producer of micro processor controlled telephone switching systems can offer a uniquely creative environment, where one can capitalise on talent and ideas. Engineers are being sought with the following skills: a good degree, real-time experience, a knowledge of the Motorola 68000 series, Pascal, Coral, or Assembler and a telephony background is desirable.

CW69/8

Hardware Design Engineer

Berkshire £11,000

Three years hardware design and micro Assembler experience are all that is necessary to join this small team developing micro-computer, video and disc products for a highly successful family of LAN microprocessor systems. Opportunities exist to move on from hardware design into other more diverse areas of the company.

CW69/9

Candidates must be technically good and capable of managing 10 to 20 Engineers. A very good hardware background and a working knowledge of software and firmware is essential. This appointment involves taking microprocessor-based process control projects through from a conceptual level to a tangible product. Naturally, similar previous experience is essential.

CW69/10

Design Engineers (Senior)

South Herts. (and U.S.A.) £ to £14,000

Motorola based products, being designed by this company, are taking the Video, Audio and Film industries to new levels of production excellence. Software includes MDS, CP/M, OS9, UNIX. Languages include PASCAL and Assembler. The target hardware centres around the Motorola 6800 family. The environment is one of Research and Development, so a preference for a good degree, real-time experience, a knowledge of the Motorola 68000 series, Pascal or Basic would be most useful.

CW69/11

Software Designers

Bedfordshire £ to £13,000

Specialising in computer systems and terminals for the retail trade, this company is in the pilot-of-sale business. They successfully market and sell a range of products and services to the retail, wholesale and distribution trades. Real-time systems experience and expertise in micros and software development, together with several years Assembler programming and knowledge of Pascal or Basic would be most useful.

CW69/12

Senior Software Designer

Berkshire £16,000

This position involves the development of communications and advanced applications software within a LAN micro-computer environment. Obviously, candidates must have solid, in-depth, real-time software design experience, preferably involving micro-processor based systems. Total commitment is essential but will be extremely well rewarded within a short time.

CW69/13

Intelligent Terminal Design

Berkshire £ Salaries are various

Equipment currently in production is Z80 based, but development work is now being carried out on a variety of 16 bit micros. Opportunities exist for Systems and Applications Designers/Programmers and even Technical Authors, at a variety of levels. Apart from software programmable intelligent terminal systems, this company also produce desk top computers and business systems.

CW69/14

H/W Project Leader

Middlesex £££££

An experienced Hardware Project Leader is needed to help lead a project to design, develop and produce an electronic industrial monitoring and control system. Candidates must be good academically (at least a II, but preferably a I) and be in their late twenties/early thirties. A knowledge of LANs, Zilog 80, 6800 and M68000 techniques would be most advantageous.

CW69/15

Evenings and weekends 0908-670094 or 0908-554348

If you have similar skills, but no one appointment looks exactly right for you please contact the Modus Consultants anyway to discuss other opportunities which are available, for example, in the creative world of computer games, home computers, etc.

Modus Consultants are in London every Tuesday & Thursday - come and meet us

Ref: CW69/16



Bluebird
Software Ltd.

150 Buckingham Palace Road, London SW1W 9TR
Telephone: 01-730 9485/8

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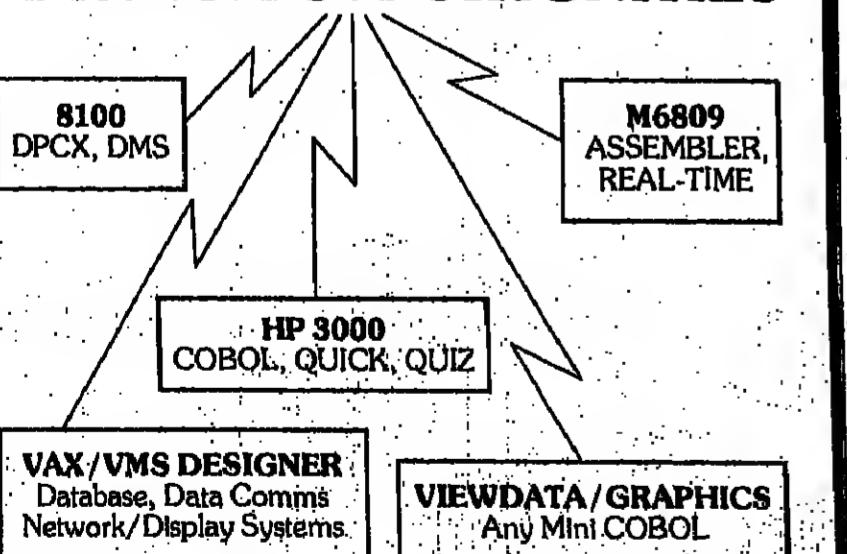
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(3643)

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(3646)



Norsk Data is the rapidly expanding manufacturer of 16-bit and 32-bit superminis with our European and UK headquarters based in the Berkshire town of Newbury.

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Reference check every applicant before making the final offer. If you can do so independently, so much the better. Candidates often bend the truth. So do referees. It is easy to write a reference by dwelling on the saving graces and carefully

overlooking the obvious negatives. Most people instinctively want to say nice things about other people, even if it hurts like hell to do so.

However, when a passing employer is asked pertinent questions over the 'phone, about the candidate's strengths, weaknesses and performance, then reality is likely to emerge.

It's difficult to get a reference from the candidate's current employer without creating difficulties, but it is still important to take or make the job offer on the strict understanding that you intend to take up references once such employment has been terminated.

Get a second opinion on the candidate from a colleague, either by involving him in the interview or getting him to do so separately. It's amazing how objective one can be about a candidate by simply sitting on the sidelines as a passive observer while someone else carries out the actual interview.

Avoid seeking "Jesus Christ Superstar" particularly in the form of your own image. It's so easy to fall into the trap of expecting all good salespeople to look like a clone of yourself. Getting other people involved with the interviewing helps to avoid this.

Be sure to take personal presentation into account, but don't rely on physical appearance. Certainly a candidate with dirty fingernails, crumpled clothes, grubby shoes and a tatty briefcase is unlikely to be suitable material. After all, this must be the way he or she intends to dress for work. On the other hand, don't be put off by ugliness, or a heavy regional accent, etc. Concentrate on the eyes, the way the candidate communicates, look for sincerity, knowledge and commitment.

The rest of the process is generally a matter of applying your judgment to the candidates who present themselves. However, some golden rules need to be observed:

The interview is a two-way sell. Don't simply sit there expecting the applicant to zap it to you.

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SALES BIT
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Golden rules for the job interview

IT is important that a job interview is based on a formal job specification and structure that ensures both parties gain a complete insight to what they are letting themselves in for if they wish to proceed any further.

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